

National Bureau of Standards

AUG 21 1947

## IONOSPHERIC DATA

ISSUED  
DECEMBER, 1946

PREPARED BY CENTRAL RADIO PROPAGATION LABORATORY  
National Bureau of Standards  
Washington, D.C.



## IONOSPHERIC DATA

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## TERMINOLOGY AND SCALING PRACTICES

The symbols and terminology used in this report are those adopted by the International Radio Propagation Conference, and given in detail on pages 24 to 26 of the report IRPL-C61, "Report of International Radio Propagation Conference," and in the section on "Terminology" in report IRPL-F5.

Beginning with IRPL-F14 the symbol L, defined as follows, is used in detailed tabulations of hourly values of ionosphere characteristics observed at Washington:

L or l = critical frequency, muf, or muf factor for F1 layer omitted because no definite and abrupt change in slope of the h'f curve occurs either for the first reflection or for any of the multiples.

In the past, ionospheric conditions were summarized on a monthly basis by using average or mean values for each hour of the day for each month. However, following the recommendations of the International Radio Propagation Conference, held in Washington 17 April to 5 May 1944, beginning with data for 1 Jan. 1945, median values were used by IRPL wherever possible. Thus, median values are given for Washington, for all stations reporting directly to the CRPL, for the Canadian stations, and for all others sending to the CRPL detailed tabulations from which medians can be computed.

Where averages are reported, they are, at any hour, the average for all the days during the month for which numerical data exist.

The monthly median values used here are the values equaled or exceeded on half the days of the month at the given hour. The following conventions are used in determining the medians for hours when no measured values are given because of equipment limitations and ionospheric irregularities. Symbols used are those given in the report referred to above, IRPL-C61.

a. For all ionospheric characteristics:

Values missing because of A, B, C or F (see terminology referred to above) are omitted from the median count.

b. For critical frequencies and virtual heights:

Values missing because of E are counted as equal to or less than the lower limit of the recorder.

Values missing because of D are counted as equal to or greater than the upper limit of the recorder.

Values missing because of G are counted:

1. For  $f^oF2$ , as equal to or less than  $f^oF1$ .

2. For  $h'F2$ , as equal to or greater than the median.

Values missing for any other reason are omitted from the median count.

c. For muf factors (M-factors):

Values missing because of G are counted as equal to or less than the median.

Values missing for any other reason are omitted from the median count.

d. For sporadic E (Es):

Values of fEs missing because no Es reflections appeared, the equipment functioning normally otherwise, are counted as equal to or less than the median  $f^{\circ}E$ , or equal to or less than the lower frequency count of the recorder.

Values of fEs missing for any other reason, and values of hEs missing for any reason at all are omitted from the median count.

Beginning with data for November 1945, doubtful monthly median values for ionospheric observations at Washington, D.C., are indicated by parentheses, in accordance with the practice already in use for doubtful hourly values. The following are the conventions used to determine whether or not a median value is doubtful:

1. If only four values or less are available, the data are considered insufficient and no median value is computed.

2. For the F2 layer, if only five to nine values are available, the median is considered doubtful. The E and F1 layers are so regular in their characteristics that, as long as there are at least five values, the median is not considered as doubtful.

3. For all layers, if more than half of the values used to compute the median are doubtful (either doubtful or interpolated), the median is considered doubtful.

It is expected that this practice will be of assistance in evaluating the monthly median Washington data.

The same conventions are used by the CRPL in computing the medians from tabulations of daily and hourly data for stations other than Washington, beginning with the tables in IRPL-F18.

"Extent of E" is defined as follows: the highest value of  $f^{\circ}E$ . This is usually Es, but may include cases of normal E which were difficult to distinguish from Es, owing to the absence of a definite cusp.

## MONTHLY AVERAGE AND MEDIAN VALUES OF WORLD-WIDE IONOSPHERIC DATA

The ionospheric data given here in Tables 1 to 77 and Figs. 1 to 118 were assembled by the Central Radio Propagation Laboratory for analysis and correlation, incidental to CRPL predictions of radio propagation conditions. The data are median values unless otherwise indicated. The following are the sources of the data:

Australian Council for Scientific and Industrial Research,  
Radio Research Board:

Brisbane, Australia  
Canberra, Australia  
Cape York, Australia  
Hobart, Tasmania  
Townsville, Australia

British Department of Scientific and Industrial Research,  
Radio Research Board:

Slough, England  
Burghead, Scotland  
Colombo, Ceylon  
Oslo, Norway  
Cairo, Egypt  
Falkland Is.  
Tromso, Norway

Canadian Radio Wave Propagation Committee:

Churchill, Canada  
Ottawa, Canada  
St. John's, Newfoundland  
Prince Rupert, Canada  
Clyde, Baffin I.  
Swan River, Manitoba (Mobile unit)  
The Pas, Manitoba (Mobile unit)  
Gillam, Manitoba (Mobile unit)  
Portage la Prairie, Manitoba

New Zealand Radio Research Committee:

Kermadec Is.  
Christchurch (Canterbury University College Observatory)  
Campbell I.  
Pitcairn I.  
Rarotonga I.

South African Council for Scientific and Industrial Research:  
Johannesburg, Union of S. Africa  
Capetown, Union of S. Africa

Scientific Research Institute of Terrestrial Magnetism, Moscow, U.S.S.R.:  
Bukhta Tikhaya, U.S.S.R.  
Tomsk, U.S.S.R.  
Sverdlovsk, U.S.S.R.  
Moscow, U.S.S.R.  
Leningrad, U.S.S.R.  
Alma Ata, U.S.S.R.

Carnegie Institution of Washington (Department of Terrestrial Magnetism):  
Huancayo, Peru  
Watheroo, W. Australia

United States Army Signal Corps:  
Leyte, Philippine Is.  
Tokyo, Japan  
Okinawa, I.

National Bureau of Standards (Central Radio Propagation Laboratory):  
Washington, D. C.  
San Francisco, California (Stanford University)  
Baton Rouge, Louisiana (Louisiana State University)  
San Juan, Puerto Rico (University of Puerto Rico)  
Boston, Massachusetts (Harvard University)  
Fairbanks, Alaska (University of Alaska, College, Alaska)  
Wuchang, China (National Wuhan University)  
Palmyra I.  
Adak, Alaska  
Guam I.  
Maui, Hawaii  
Trinidad, British West Indies

All India Radio (Government of India), New Delhi, India:  
Bombay, India  
Delhi, India  
Madras, India  
Peshawar, India

Radio Wave Research Laboratories, Central Broadcasting Administration:  
Chungking, China  
Peiping, China

Beginning with CRPL-F26, publication of tables of so-called "provisional data," reported to the CRPL by telephone or telegraph is discontinued. The reason for this change in policy is that users of the data hitherto published in this form receive it through established channels sooner than it reaches them in the F-series. Furthermore, having two sets of data, "provisional" and "final," for the same station for the same month leads to confusion.

It must be emphasized that there is no change in the methods used for rapid reporting and exchange of data. The change has to do only with the printing of provisional data in the F-series. Comments on this decision are invited.

The tables and graphs of ionospheric data are correct for the values reported to the CRPL, but, because of variations in practice in the interpretation of records and scaling and manner of reporting of values, may at times give an erroneous conception of typical ionospheric characteristics at the station. Some of these errors are due to:

- a. Differences in scaling records where spread echoes are present.
- b. Omission of values where  $f^{\circ}F2$  is less than or equal to  $f^{\circ}F1$ , leading to erroneously high values of monthly average or median values.
- c. Omission of values where critical frequencies are less than the lower frequency limit of the recorder, also leading to erroneously high values of monthly average or median values.

These effects were discussed on pages 6 and 7 of the previous F-series report IRPL-F5.

The dashed-line prediction curves of the graphs of ionospheric data are obtained from the predicted zero-muf contour charts of the CRPL-D series publications. Predictions for individual stations used to construct the charts may be more accurate than the values read from the chart since some smoothing of the contours is necessary to allow for the longitude effect within a zone.

Discrepancies between predicted and observed values are often ascribable to these effects.

#### IONOSPHERIC DATA FOR EVERY DAY AND HOUR AT WASHINGTON, D. C.

The data given in Tables 1 to 89 follow the scaling practices given in the report IRPL-C61, "Report of International Radio Propagation Conference," pages 36 to 39, and the median values are determined by the conventions given above under "Terminology and Scaling Practices."

## IONOSPHERE DISTURBANCES

Table 90 presents ionosphere character figures for Washington, D.C., during November 1946, as determined by the criteria presented in the report IRPL-R5, "Criteria for Ionospheric Storminess," together with American magnetic K-figures, which are usually covariant with them.

Table 91 lists for the stations whose locations are given the sudden ionosphere disturbances observed on the continuous field intensity recordings made at the Sterling Radio Propagation Laboratory during November 1946.

Table 92 gives provisional radio propagation quality figures for North Atlantic and North Pacific areas, for Cl to 12 and 13 to 24 GCT, October 1946, compared with the CRPL daily radio disturbance warnings, which are primarily for the North Atlantic paths, the CRPL weekly radio propagation forecasts of probable disturbed periods, and the half-day American geomagnetic K-figures.

The radio propagation quality figures for the North Atlantic are prepared from radio traffic and ionospheric data reported to the CRPL, in the manner described in detail in report IRPL-R31, "North Atlantic Radio Propagation Disturbances October 1943 through October 1945," issued 1 Feb. 1946.

The radio propagation quality figures for the North Pacific are prepared from radio traffic and ionospheric data reported to the CRPL, in a manner similar to that of IRPL-R31. The master scale of IRPL-R31 was used to formulate conversion scales for the North Pacific reports. Currently, beginning with CRPL-F23, issued July 1946, the North Pacific radio propagation quality figures reported are prepared from these revised conversion scales rather than, as hitherto, from the conversion scales of report IRPL-R13, "Ionospheric and Radio Propagation Disturbances, October 1943 through February 1945," issued 24 May 1945.

These radio propagation quality figures give a consensus of opinion of actual radio propagation conditions as reported by the half-day over the two general areas. It should be borne in mind, however, that though the quality may be disturbed according to the CRPL scale, the cause of the disturbance is not necessarily known. There are many variables that must be considered. In addition to ionospheric storminess itself as the cause, conditions may be reported as disturbed because of seasonal characteristics, such as are particularly evident in the pronounced day and night contrast over North Pacific paths during the winter months, or because of improper frequency usage for the path and time of day in question.

Insofar as possible, frequency usage is included in rating the reports. Where the actual frequency usage is not shown in the report to the CRPL, it has been assumed that the report is made on the use of optimum working frequencies for the path and time of day in question. Since there is a possibility that all of the disturbance shown by the quality figures is not due to ionospheric storminess alone, care should be taken in using the quality figures in research correlations with solar, auroral, geomagnetic or other data. Nevertheless, these quality figures do reflect a consensus of opinion of actual radio propagation conditions as found on any one half-day in either of the two general areas.

#### AMERICAN RELATIVE SUNSPOT NUMBERS

Table 93 presents the daily median values of relative sunspot numbers as reported by American observers for November 1946. The reports have been reduced, by appropriate constants, approximately to the Zurich scale of relative sunspot numbers. The monthly relative sunspot number is the mean of the daily median values listed in the table. This method was devised by Mr. A. H. Shapley while a member of the staff of the Department of Terrestrial Magnetism, Carnegie Institution of Washington. Details will be found in his article, "American Observations of Relative Sunspot Numbers in 1945 for Application to Ionospheric Prediction," Popular Astronomy, Vol. 54, No. 7, pp. 351-358, August 1946. The criteria for A observers have been modified slightly, beginning with September 1946. In order for an observer's report to be included in the American sunspot numbers, the mean deviation of the reduction factors for his observations for the four preceding months must have been within 15% of the 4-month running mean of his reduction factors, rather than within an interval of  $\pm 0.16$  of that running mean. This avoids favoring observers with small reduction factors and discriminating against observers with large reduction factors. In addition sunspot numbers must have been reported for at least one-half of the month during three-quarters of the preceding year. This will tend to restrict the observers to those whose observations are consistent from month to month without rejecting the work of observers for whom weather conditions are unsatisfactory for observations during some months of the year.

#### ERRATA

1. CRPL-F27, Table 34, p. 18:

The data for Peshawar, India were observed at 2230 instead of 2300.

2. CRPL-F27, Fig. 37, p. 52:

The curve between the F2 and lower E and Es actual data curves should be labeled "F1" instead of "E."

3. CRPL-F27, Tables 44, 45, 46:

Values of  $f^{\circ}F2$  which are greater than 12.3 should be followed by "D."

## INDEX OF IONOSPHERIC DATA SINCE APRIL 1941

The following index of tables and graphs of ionospheric data supersedes the first index, which appeared in IRPL-F17.

The first publication, "High Frequency Radio Transmission Conditions, April 1941, with Predictions for July 1941," bore no date of issue, and is referred to by the first date appearing in the title, namely, April 1941. This method of identification is continued in the index up to the publication, "High Frequency Radio Transmission Conditions, March 1942 and Predictions," which was the first one to bear an issue date, namely, April 6, 1942, and is referred to in the index by the month of issue, April. The month of issue is used from then until the numbered IRPL-F series begins. There were two issues in February 1943; confusion may be avoided by referring to the footnotes for that month in the index.

Beginning with the October 1943 issue, the title was changed to "Radio Propagation Conditions." Beginning with the February 1944 issue, there were two publications each month; one, "Radio Propagation Conditions," contained graphs of ionospheric data; the other, entitled "Monthly Averages of Ionospheric Data," contained tables only.

With the advent of the IRPL-F series, first issued in September 1944, graphs and tables appeared in the same publication.

Where provisional data were published, such tables have been indexed. Final data for the same month are nearly always in the same issue as their graphs and may be found through the graph section of the index. Where no tabulations of provisional data were published, index numbers refer to tables of final data. Footnotes have been added to clarify certain references in the index.

Attention is invited to the fact that errors in the tables and graphs of any issue of the F-series are, when found, corrected in the "Errata" section of subsequent issues.

Index of Tabulations of Ionospheric Data for 1941-1942

	1941							1942													
	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
Fairbanks, Alaska			27	27	27	27	27	27	27	26	26	26	26	26	26	26	26	26	26	26	26
Huancayo, Peru	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28
San Juan, Puerto Rico	28	28	28	28	28	28	28	28	28												

Index of Graphs of Ionospheric Data for 1941-1942

	1941							1942													
	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
Fairbanks, Alaska			27	27	27	27	27	27	27	26	26	26	26	26	26	26	26	26	26	26	26
Huancayo, Peru	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28
San Juan, Puerto Rico	28	28	28	28	28	28	28	28	28												
Washington, D. C. <sup>1</sup>	Ap	My	Ja	Jy	A	S	O	N	D	J	F	Ap <sup>2</sup>	My	Ja	Jy	A	S	O	N	D	F <sup>3</sup>

- 1 Graphs of data for April 1941 through February 1942 are identified by the first month appearing in the title; e.g., "High-Frequency Radio Transmission Conditions, April 1941, with Predictions for July 1941," contains graphs of Washington data for April 1941. There were no "issue dates" during this period.
- 2 Issue dates were given to the reports for the first time. Thus the graphs for March 1942 appeared in the April 6, 1942 issue.
- 3 Issue of February 4, 1943.

Index of Tabulations of Ionospheric Data for 1943-1944

	1943												1944														
	J	F	M	A	N	J	J	A	S	O	N	D	J	F	M	A	N	J	J	A	S	O	N	D			
Baton Rouge, Louisiana													My	Je	Jy	A	1	2	3	4	5						
Brisbane, Australia													1	2	2	3	4	5									
Bukhta Tikhaya, U.S.S.R.													6	6	19	19	19	19	6	6	6	6					
Burghead, Scotland													1	1			3	4	6								
Campbell I.													1	1	2	3	5	7									
Canberra, Australia																			1	2	2	3	4	5			
Capetown, Union of S. Africa																			2	5	4						
Cape York, Australia																								7			
Christchurch, N. Z.																			1	1	2	3	4	5			
Christmas I.																								5			
Churchill, Canada																			My	Je	Jy	A	1	2	3	4	5
Clyde, Baffin I.																			Je	Je	Jy	A	1	2	3	4	5
Delhi, India																			2	1	3	3	4	6			
Fairbanks, Alaska																			My	Je	Jy	A	1	2	3	4	5
Great Raddow, England																			1	2	2	3	5	5			
Huancayo, Peru																			My	Je	Jy	A	1	2	3	4	5
Kermadec Is.																			1	1	2	3	4	5			
Madras, India																			4	4	4	4	12	12	12		
Maui, Hawaii																			My	Je	Jy	A	1	2	3	4	5
Moscow, U.S.S.R.																			6	6	6	6	6	6	6	19	
Ottawa, Canada																											
Pitcairn I.																			Je	Ja	Jy	1	1	2	3	4	
Reykjavik, Iceland																								5	5	6	
San Francisco, California																			My	Ja	Jy	1	1	2	3	4	
San Juan, Puerto Rico																			Je	Ja	Jy	A	1	2	3	4	
Slough, England																								5	5	7	
Snainton, England																								2	2		
Sverdlovsk, U.S.S.R.																								2	3	6	
Tomsk, U.S.S.R.																								2	3	12	
Trinidad, Brit. W. Indies																			26	Ja	Ja	Jy	A	1	2	3	4
Washington, D. C.																								5	5	7	
Watheroo, Australia																								2	2		
																								2	3	6	
																								2	3	6	
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Index of Graphs of Ionospheric Data for 1943-1944

1 Issue of February 22, 1943.

## Index of Tabulations of Ionospheric Data for 1945-1946

	1945												1946												
	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	
Adak, Alaska													15	21	18										
Alma Ata, U.S.S.R.													19	15	20	22									
Baton Rouge, Louisiana	12	7	8	9	10	12	13	14	15	16	17	17				21	20	22	22	24	23	24	25	27	
Bombay, India													16	17	19	21	21				24	24			
Boston, Massachusetts													8	10	10	11	12	13	14	15	16	17			
Brisbane, Australia	6	7	9	10	11	12	13	14	15	16	17	21				18	19	20	21	22	23	24	25	27	
Bukhta Tikhaya, U.S.S.R.	11	11	12	12	14	14	15	15	19	20	20	20				25	24	24	27	27					
Burghhead, Scotland	7	8	10	11	12	14	14	15	16	17	18				18	19	20	21	22	23	24	25	27		
Cairo, Egypt																20	20	22	23	25	28	27			
Campbell I.	7	8	9	10	11	12	13	14	15	16	17	18				21	21	22						27	
Canberra, Australia	6	8	9	10	11	12	13	14	15	16	17	19				19	20	23							
Capetown, Union of S. Africa	6	9	8	10	11	14	13	15	15	16	17	18				19	20								
Cape York, Australia	8	8	9	10	11	12	13	14	15	16	17	21				19	20								
Christchurch, N. Z.	7	7	8	10	11	12	13	14	15	16	17	18				20	20	21	22	24	26	27	27		
Christmas I.	7	8	8	10	10	12	12	14	14	16	16	18				19	20	21	21	23	23				
Chungking, China													15	15	16	17	18								
Churchill, Canada	6	7	8	9	10	11	12	13	14	15	17	17				19	19	21	22	24	25	26			
Clyde, Baffin I.	6	8	9	10	11	12	13	15	16	24	24				18	19	20	21	22	24	25	27			
Colombo, Ceylon													11	11	12	14	14	15	16	17	19	23	25	26	
Delhi, India	7	8	10	11	12	13	14	14	16	16	19	19				25	24	24	27	27					
Fairbanks, Alaska	6	7	8	9	10	11	12	14	14	15	16	18				19	20	20	21	22	23	24	25		
Falkland Is.													20			20	23	23	24	27	27				
Great Budlow, England	6	7	8	10	11	12	13	14	15	16	17	18				19	21	22	22	22	25	24	25		
Guam I.													18			19	22	22	22	25	24	25	27	27	
Hobart, Tasmania													21			20	20	22	22	24	25	27			
Huancayo, Peru	6	7	8	9	11	11	13	13	15	15	17	17				18	20	20	22	23	24	25	26		
Johannesburg, Union of S. Africa	7	7	9	10	11	12	13	14	15	16	18	21				23	24	25	27	27					
Kernadec Is.													7			20	21	22	22	26	26	28	27		
Kochel, Germany													15												
Kwajalein Atoll																									
Leningrad (LDRS), U.S.S.R.	12	12	14	14	14	14	14	14	19	19	20	20	22				24	24							
Leningrad (METIAS), U.S.S.R.													20	20			22	22	23	22	23	24	25	28	
Leyte, Philippine Is.													12	12	14	16	16	19	22						
Loshan, China																20	20	20							
Madras, India	12	12	12	12					16	17	19	21	21			25	24	24	27	27					
Maui, Hawaii	6	7	8	9	10	11	13	14	14	16	16	17				18	19	21	22	22	23	25	27		
Moscow, U.S.S.R.	11	11	11	12	14	14	14	19	19	19	20	22				26	25	23	23	23					
Moscow, (Krasnaja Pakhra), U.S.S.R.																26	25	25	25	25					
Okinawa I.													14	18	15	15	16	17	25	18					
Oslo, Norway																20	21	23	23	25					
Ottawa, Canada													8	9	10	11	12	13	14	15	17	17			
Peiping, China																18	19	20	21	22	23	24	25		
Peshawar, India																22	25	25	26	26					
Pitcairn I.													16	17	19	21	21								
Portage la Prairie, Manitoba	7	8	9	10	11	12	13	14	15	16	16				25	24	24	27	27						
Prince Rupert, Canada													11	12	13	14	15	16	16						
Barotonga I.													20	20	20	20	20	20	23	17	18				
Reykjavik, Iceland	6	7	8	9	10	11	12						10	11	12	13	14	15	17	17					
St. John's, Newfoundland													6	7	8	9	10	11	12	13	14	15	17	17	
San Francisco, California													6	7	8	10	11	12	13	14	15	17	17		
San Juan, Puerto Rico													6	7	8	10	11	12	13	14	15	16	17		
Singapore, British Malaya													8	9	10	11	12	13	20	20	20	20	21		
Slough, England													10	11	11	12	14	14	14	15	19	19	20		
Sverdlovsk, U.S.S.R.													6	7	8	9	10	11	12	13	14	15	17		
Swan River, Canada													6	7	8	10	11	12	13	14	15	16	17		
The Pas, Canada																									
Tokyo, Japan													19	19	19										
Tomsk, U.S.S.R.													22	22	22	23	23	24	24	25	26	26	26		
Townsville, Australia													26			23									
Trinidad, Brit. West Indies																									
Tromso, Norway													7	8	13	20	26	15	14	15	16	17			
Victoria Beach, Canada													21												
Washington, D. C.	6	7	8	9	10	11	12	13	14	14	15	16	17			18	19	20	21	22	23	24	25		
Watheroo, Australia	7	8	9	10	11	12	13	14	15	15	16	17				19	20	22	22	23	24	24	25		

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	1945												1946												
	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	
Adak, Alaska													21	21	21										
Alma Ata, U.S.S.R.													19	22	22	22	24	24	25	26	27				
Baton Rouge, Louisiana													22	20	22										
Bombay, India													16	17	18										
Boston, Massachusetts													18	19	21	21									
Brisbane, Australia	18	18	18	18	18	18	18						17	17	19	21									
Bukhta Tikhaya, U.S.S.R.													19	19	20	20	22								
Burghead, Scotland																									
Cairo, Egypt																									
Campbell I.																									
Canberra, Australia	18	18	18	18	18	18	18						17	17	19	21									
Capetown, Union of S. Africa																									
Cape York, Australia	18	18	18	18	18	18	18						17	17	19	21									
Christchurch, N. Z.																									
Christmas I.																									
Chungking, China																									
Churchill, Canada																									
Clyde, Baffin I.																									
Colembo, Ceylon																									
Delhi, India																									
Fairbanks, Alaska																									
Falkland Is.																									
Great Budlow, England																									
Guam I.																									
Hobart, Tasmania																									
Huancayo, Peru																									
Johannesburg, Union of S. Africa																									
Kermadec Is.																									
Leningrad, (LDRS), U.S.S.R.	23	23	23	23	23	23	23						20	20	22										
Leningrad (WETKAS), U.S.S.R.													20	20	22										
Leyte, Philippine Is.																									
Leshan, China																									
Madras, India																									
Maui, Hawaii																									
Moscow, U.S.S.R.													19	19	19	20	20	22							
Moscow, (Krasnaja Pakhra), U.S.S.R.																									
Okinawa I.																									
Oslo, Norway	18	18											17	25	18										
Ottawa, Canada													16	17	18										
Peiping, China																									
Peshawar, India																									
Pitcairn I.																									
Portage la Prairie, Canada																									
Prince Rupert, Canada																									
Rarotonga I.																									
St. John's, Newfoundland													22	18	18										
San Francisco, California													16	17	18										
San Juan, Puerto Rico													16	17	18										
Singapore, British Malaya																									
Sleuth, England													20	20	20	23	23								
Sverdlovsk, U.S.S.R.													19	19	19	19	20	20	20	22	20	20	25	25	25
Swan River, Canada																									
The Pas, Canada																									
Tokyo, Japan																									
Tomsk, U.S.S.R.																									
Townsville, Australia																									
Trinidad, Brit. West. Indies																									
Tromsø, Norway																									
Victoria Beach, Canada																									
Washington, D. C.	6	7	8	9	10	11	12	13	14	15	16	17	21												
Watheroo, Australia																									
White Sands, New Mexico																									

Table 2

Fairbanks, Alaska (64.9°N, 147.8°W)

November 1946

October 1946

Time	h <sup>1</sup> F2	F0F2	h <sup>1</sup> F1	F0F1	h <sup>1</sup> E	F0E	F2-M3000
00	260	(5.0)			2.6	(2.9)	
01	265	4.7			2.5	2.8	
02	270	4.4			2.6	2.8	
03	260	4.4			2.8	2.8	
04	250	4.2			2.0	2.9	
05	250	3.8			2.8	2.8	
06	260	3.7			2.9	2.9	
07	240	6.5			110	1.9	
08	230	(9.3)			110	2.5	
09	230	(10.7)			110	3.4	
10	230	11.4	210		110	3.9	
11	230	(11.5)	220		100	3.8	
12	230	(12.2)	215		100	3.4	
13	230	(12.0)	220		100	3.8	
14	230	12.5	220		100	3.2	
15	230	12.5			110	3.5	
16	230	11.6			110	2.8	
17	220	(10.4)			110	2.2	
18	220	(9.3)			100	2.8	
19	230	(8.0)			100	2.4	
20	230	(6.7)			100	2.4	
21	250	(6.2)			100	2.7	
22	250	(5.6)			100	2.9	
23	250	5.4			100	2.8	
					100	2.9	
					100	2.7	

Time: 75.0°W.  
Sweep: 0.75 Mc to 11.5 Mc, automatic; supplemented when necessary  
by manual operation from 8.0 Mc to 17.0 Mc.

Table 3

Time	h <sup>1</sup> F2	F0F2	h <sup>1</sup> F1	F0F1	h <sup>1</sup> E	F0E	F2-M3000
00	300	4.4			5.4	2.6	
01	300	4.3			5.0	2.6	
02	290	4.4			4.1	2.8	
03	310	4.0			2.7	3.3	
04	340	3.3			2.9	3.6	
05	355	4.2			110	2.9	
06	330	4.0			130	3.0	
07	290	4.9			130	3.0	
08	280	5.8			130	3.0	
09	290	6.9	240		120	2.8	
10	280	7.9	240		120	2.9	
11	290	8.5	240		120	3.0	
12	290	8.7	230		120	3.0	
13	280	9.4	240		120	2.9	
14	280	9.5	240		130	2.7	
15	265	9.9	240		130	2.7	
16	250	9.6	3.1		130	2.5	
17	250	9.0			130	2.3	
18	265	7.2			130	2.6	
19	280	5.0			120	2.7	
20	280	5.0			125	2.5	
21	290	4.8			130	3.0	
22	290	4.8			128	3.8	
23	285	4.9			130	2.7	

Time: 90.0°W.  
Sweep: 2.0 Mc to 16.0 Mc in one minute.

October 1946

Time	h <sup>1</sup> F2	F0F2	h <sup>1</sup> F1	F0F1	h <sup>1</sup> E	F0E	F2-M3000
00	290				2.0		
01	320				2.8		
02	350				3.0		
03	330				3.0		
04	345				3.0		
05	340				2.8		
06	300				2.9		
07	280				2.9		
08	260				2.9		
09	250				2.9		
10	250				2.9		
11	250				2.9		
12	260				2.9		
13	260				2.9		
14	250				2.9		
15	245				2.9		
16	248				2.9		
17	230				2.9		
18	230				2.9		
19	220				2.9		
20	220				2.9		
21	220				2.9		
22	230				2.7		
23	270				3.3		

Time: 150.0°W.  
Sweep: 16.0 Mc to 0.5 Mc in fifteen minutes.

Table 4

Time	h <sup>1</sup> F2	F0F2	h <sup>1</sup> F1	F0F1	h <sup>1</sup> E	F0E	F2-M3000
00	290				2.0		
01	320				2.8		
02	350				3.0		
03	330				3.0		
04	345				3.0		
05	340				2.8		
06	300				2.9		
07	280				2.9		
08	260				2.9		
09	250				2.9		
10	250				2.9		
11	250				2.9		
12	260				2.9		
13	260				2.9		
14	250				2.9		
15	245				2.9		
16	248				2.9		
17	230				2.9		
18	230				2.9		
19	220				2.9		
20	220				2.9		
21	220				2.9		
22	230				2.7		
23	270				3.3		

Time: 120.0°W.  
Sweep: Manual operation.

Table 5  
Portage la Prairie, Manitoba (49.9°N, 98.3°W)

October 1946

Time	h <sup>1</sup> E2	f <sub>OFF</sub>	h <sup>1</sup> F1	f <sub>OFF</sub>	h <sup>1</sup> E	f <sub>OFF</sub>	h <sup>1</sup> E5	f <sub>OFF</sub>	F2-M3000
00	260	3.9			1.9				
01	280	3.7			1.6				
02	300	3.6			1.8				
03	300	3.6			1.8				
04	290	3.6			1.8				
05	290	3.5							
06	260	3.5							
07	250	4.9			1.8				
08	250	6.2	225	3.0	2.2				
09	245	7.8	210	3.7	2.5				
10	250	8.1	210	4.0	2.8				
11	260	8.8	210	4.4	3.0				
12	260	9.6	210	4.6	3.1				
13	250	10.5	210	4.2	3.1				
14	250	10.3	210	3.8	2.9				
15	250	11.1	220	3.6	3.0				
16	240	10.5	220	3.5	2.4				
17	240	9.8	240	3.0	2.0				
18	230	9.1							
19	220	8.0							
20	230	7.3							
21	240	5.8							
22	240	5.2							
23	260	4.6							

Time: 90.0°W.  
Sweep: 1.2 Mc to 16.0 Mc in approximately two minutes.Table 6  
Ottawa, Canada (45.5°N, 75.8°W)

October 1946

Time	h <sup>1</sup> E2	f <sub>OFF</sub>	h <sup>1</sup> F1	f <sub>OFF</sub>	h <sup>1</sup> E	f <sub>OFF</sub>	h <sup>1</sup> E5	f <sub>OFF</sub>	F2-M3000
00	275	5.0							
01	275	4.5							
02	280	4.2							
03	290	3.6							
04	300	3.6							
05	285	3.2							
06	260	4.0							
07	220	6.5							
08	220	8.4							
09	220	9.5							
10	220	10.6							
11	230	11.1							
12	230	11.7							
13	230	11.6							
14	230	11.6							
15	225	11.5							
16	220	11.2							
17	220	10.6							
18	210	10.1							
19	220	8.5							
20	230	7.6							
21	240	6.9							
22	260	6.2							
23	270	6.0							

Time: 75.0°W.  
Sweep: 1.93 Mc to 13.5 Mc. Manual operation.

Table 7

Boston, Massachusetts (42.4°N, 71.2°W)

October 1946

Time	h <sup>1</sup> E2	f <sub>OFF</sub>	h <sup>1</sup> F1	f <sub>OFF</sub>	h <sup>1</sup> E	f <sub>OFF</sub>	h <sup>1</sup> E5	f <sub>OFF</sub>	F2-M3000
00	300	5.7			2.6				
01	300	5.4			2.6				
02	300	5.0			2.6				
03	298	4.5			1.6				
04	288	3.7			1.6				
05	280	3.7			1.4				
06	275	5.0			2.7				
07	258	7.3			2.9				
08	260	8.3			2.9				
09	265	9.2			3.0				
10	265	8.7			2.9				
11	280	(9.9)			(2.9)				
12	295	9.4			2.8				
13	280	(9.9)			(2.9)				
14	280	(9.5)			(2.8)				
15	275	9.5			2.9				
16	250	9.7			2.9				
17	250	8.9			2.9				
18	250	8.0			2.8				
19	258	7.8			2.7				
20	265	7.4			2.7				
21	292	6.8			2.6				
22	298	6.5			2.6				
23	300	6.0			2.6				

Time: 75.0°W.  
Sweep: 1.2 Mc to 16.0 Mc in approximately two minutes.

Table 8

San Francisco, California (37.4°N, 122.2°W)

October 1946

Time	h <sup>1</sup> E2	f <sub>OFF</sub>	h <sup>1</sup> F1	f <sub>OFF</sub>	h <sup>1</sup> E	f <sub>OFF</sub>	h <sup>1</sup> E5	f <sub>OFF</sub>	F2-M3000
00	300	4.1							
01	310	4.1							
02	305	4.2							
03	300	4.1							
04	290	4.2							
05	280	4.1							
06	260	4.8							
07	240	7.6							
08	240	9.2							
09	240	10.4							
10	240	10.7							
11	260	11.0							
12	250	11.4							
13	250	11.7							
14	250	11.9							
15	250	11.7							
16	240	11.6							
17	230	10.4							
18	220	8.8							
19	240	6.6							
20	240	5.6							
21	260	5.0							
22	280	4.4							
23	290	4.2							

Time: 75.0°W.  
Sweep: 1.93 Mc to 13.5 Mc in one minute.Time: 120.0°W.  
Sweep: 0.8 Mc to 12.0 Mc in six minutes.

Table 9

White Sands, New Mexico ( $32.6^{\circ}\text{N}$ ,  $106.5^{\circ}\text{W}$ )

October 1946

Time	$\text{h}^{\text{M}}\text{T2}$	$\text{f}^{\text{M}}\text{F2}$	$\text{h}^{\text{M}}\text{F1}$	$\text{f}^{\text{M}}\text{F1}$	$\text{h}^{\text{E}}$	$\text{f}^{\text{E}}$	$\text{f}^{\text{M}}\text{M3000}$
00	300	4.4			3.1	2.9	
01	200	4.4			3.1		
02	290	4.4			3.0		
03	290	4.5			3.7		
04	300	4.2			2.1		
05	4.2				2.1		
06	4.7				3.1		
07	8.5				2.1		
08	24.0	10.3			2.7	3.2	
09	10.7				3.3		
10	11.9				3.7		
11	12.0				3.7		
12	12.4				3.8		
13	12.2				3.8		
14	12.2				3.5		
15	12.1				3.3		
16	11.8				2.8		
17	11.4				2.1		
18	9.6				3.5		
19	6.9				3.3		
20	6.0				3.3		
21	5.2				3.2		
22	5.2				3.1		
23	285	4.9			2.3		
					3.3		

Time:  $105.0^{\circ}\text{W}$ .  
Sweep: 0.79 Mc to 14.0 Mc in 1.75 minutes.

Table 11

Time	$\text{h}^{\text{M}}\text{T2}$	$\text{f}^{\text{M}}\text{F2}$	$\text{h}^{\text{M}}\text{F1}$	$\text{f}^{\text{M}}\text{F1}$	$\text{h}^{\text{E}}$	$\text{f}^{\text{E}}$	$\text{f}^{\text{M}}\text{M3000}$
00	6.9				2.9		
01	6.5				3.0		
02	5.8				2.9		
03	4.9				2.8		
04	4.0				2.6		
05	3.8				4.5		
06	4.5				2.8		
07	270	8.2			3.1		
08	280	9.8			3.0		
09	200	11.0			2.8		
10	310	11.4			4.1		
11	325	11.4			3.5		
12	310	11.5			2.9		
13	330	11.8			4.9		
14	320	11.5			5.0		
15	310	11.3			4.9		
16	200	10.8			3.2		
17	280	10.2			4.2		
18	280	9.2			3.8		
19	290	7.6			3.0		
20	7.0				2.7		
21	6.4				2.8		
22	6.7				2.8		
23	6.4				2.6		

Time:  $105.0^{\circ}\text{W}$ .  
Sweep: 0.79 Mc to 14.0 Mc in 1.75 minutes.

Table 12

Time	$\text{h}^{\text{M}}\text{T2}$	$\text{f}^{\text{M}}\text{F2}$	$\text{h}^{\text{M}}\text{F1}$	$\text{f}^{\text{M}}\text{F1}$	$\text{h}^{\text{E}}$	$\text{f}^{\text{E}}$	$\text{f}^{\text{M}}\text{M3000}$
00	240				9.3		
01	230				8.1		
02	220				6.1		
03	230				4.5		
04	255				3.5		
05	285				6.0		
06	260				250		
07	230				9.1		
08	250				11.6		
09	240				13.5		
10	260				13.8		
11	280				14.0		
12	280				14.4		
13	280				14.6		
14	280				14.5		
15	280				13.7		
16	260				12.9		
17	250				13.0		
18	250				12.4		
19	260				12.2		
20	240				11.6		
21	240				10.2		
22	260				9.9		
23	260				9.8		

Time:  $60.0^{\circ}\text{W}$ .  
Sweep: 2.8 Mc to 16.0 Mc in eight minutes.Time:  $90.0^{\circ}\text{W}$ .  
Sweep: 1.9 Mc to 9.8 Mc in three minutes, thirty seconds.

Table 10

Baton Rouge, Louisiana ( $30.5^{\circ}\text{N}$ ,  $91.2^{\circ}\text{W}$ )

October 1946

Time	$\text{h}^{\text{M}}\text{T2}$	$\text{f}^{\text{M}}\text{F2}$	$\text{h}^{\text{M}}\text{F1}$	$\text{f}^{\text{M}}\text{F1}$	$\text{h}^{\text{E}}$	$\text{f}^{\text{E}}$	$\text{f}^{\text{M}}\text{M3000}$
00	290				5.0		
01	290				5.0		
02	280				5.0		
03	270				4.7		
04	290				4.6		
05	290				5.5		
06	260				8.1		
07	260				4.5		
08	260				4.5		
09	260				4.5		
10	260				4.7		
11	230				2.9		
12	230				2.9		
13	240				2.9		
14	240				2.9		
15	230				2.8		
16	200				2.8		
17	280				2.9		
18	280				2.9		
19	290				2.0		
20	7.0				2.9		
21	6.4				2.8		
22	6.7				2.8		
23	6.4				2.6		

Time:  $60.0^{\circ}\text{W}$ .  
Sweep: Manual operation.

Table 12

Huancayo, Peru (12.0°S, 75.3°W)								October 1946								
Time	h 1/2	1/2	h 1/2	1/2	h 1/2	1/2	h 1/2	1/2	h 1/2	1/2	h 1/2	1/2	h 1/2	1/2	h 1/2	1/2
00	220	9.5			3.1				00	280	3.2				2.9	3.0
01	230	8.0			3.1				01	335	3.0				3.0	2.8
02	230	7.1			3.1				02	365	2.8				3.1	2.8
03	240	6.0			3.1				03	335	3.0				3.3	2.8
04	240	5.2			3.1				04	315	3.0				3.0	2.8
05	240	4.6			3.0				05	315	2.8				2.6	2.8
06	250	7.9			2.1	2.5			06	285	3.8				1.6	3.0
07	230	10.8			2.9	3.1			07	285	3.0				1.8	3.0
08	220	12.4			4.2	2.9			08	305	5.0				2.1	3.6
09	220	12.8			2.10	5.2			09	305	5.0				2.6	3.1
10	270	11.9			2.00	5.3			10	315	6.4				4.3	4.0
11	280	11.1			2.00	5.3			11	330	6.4				4.5	4.2
12	280	10.8			2.00	5.3			12	345	7.0				4.7	4.2
13	280	10.8			2.00	5.2			13	325	7.0				4.1	3.0
14	210	10.8			2.00	5.0			14	325	7.6				3.4	4.1
15	210	11.2			2.00	5.0			15	295	7.7				4.9	2.9
16	220	11.4			2.20	5.6			16	295	7.5				4.8	4.0
17	250	11.1			2.20	5.5			17	265	7.6				4.3	3.0
18	300	10.8			2.30	5.5			18	245	7.4				2.7	3.4
19	380	10.1			2.10	5.5			19	235	6.8				3.0	3.0
20	380	9.5			2.00	5.2			20	225	6.0				2.3	2.2
21	325	9.8			2.24	5.2			21	225	5.5				3.2	3.2
22	270	9.6			2.27	5.4			22	235	5.3				3.1	3.1
23	230	10.6			2.20	5.0			23	260	3.8				3.2	3.1

Time: 75.0°W.  
Sweep: 16.0 Mc to 0.5 Mc in fifteen minutes.

Table 15

Huancayo, Peru (12.0°S, 75.3°W)								September 1946								
Time	h 1/2	1/2	h 1/2	1/2	h 1/2	1/2	h 1/2	1/2	h 1/2	1/2	h 1/2	1/2	h 1/2	1/2	h 1/2	1/2
00	220	8.7			3.0				00	9.1					3.0	
01	230	7.6			3.1				01	8.7					3.1	
02	230	6.9			3.1				02	7.8					3.0	
03	230	5.8			3.1				03	6.5					2.9	
04	250	5.6			3.1				04	5.5					2.7	
05	260	4.7			3.1				05	4.7					2.8	
06	270	6.4			2.8	3.1			06	6.2					2.9	
07	240	9.5			2.8	3.5			07	9.4					3.3	
08	230	11.1			2.4	6.5			08	250	11.3				3.2	
09	280	11.2			2.20	6.2			09	250	11.6				3.1	
10	290	10.8			2.05	5.2			10	270	12.5				3.1	
11	290	10.2			2.05	5.2			11	270	12.5				3.1	
12	300	10.3			2.00	5.3			12	280	12.2				3.0	
13	300	10.2			2.00	5.2			13	270	11.7				2.9	
14	275	10.4			2.10	5.0			14	280	12.1				3.0	
15	240	10.6			2.10	5.1			15	285	11.7				3.0	
16	230	11.0			2.10	5.0			16	275	11.2				2.9	
17	260	10.7			2.00	5.7			17	275	11.6				2.9	
18	300	10.2			2.00	5.5			18	280	11.5				2.9	
19	380	9.0			1.8	2.4			19	11.3					3.0	
20	360	9.0			4.0	8.4			20	10.9					3.0	
21	280	8.8			4.2	8.5			21	10.8					2.8	
22	22	9.2			3.8	7.7			22	10.4					2.0	
23	230	9.8			2.9	2.9			23	10.0					3.0	

Time: 75.0°W.  
Sweep: 16.0 Mc to 0.5 Mc in fifteen minutes.

Table 16

Prince Rupert, Canada (54.3°N, 120.3°W)								September 1946								
Time	h 1/2	1/2	h 1/2	1/2	h 1/2	1/2	h 1/2	1/2	h 1/2	1/2						
00	280	3.2			3.0				00	9.1					3.0	
01	335	3.0			2.8				01	8.7					3.1	
02	365	4.0			3.0				02	7.8					3.0	
03	335	3.0			2.8				03	6.5					2.9	
04	315	3.0			2.8				04	5.5					2.7	
05	315	2.8			2.4				05	4.7					2.8	
06	285	3.0			2.5				06	6.2					2.9	
07	305	5.0			2.5				07	9.4					3.3	
08	315	6.4			2.5				08	250	11.3				3.2	
09	330	6.4			2.5				09	250	11.6				3.1	
10	330	7.0			2.5				10	270	12.5				3.1	
11	345	7.0			2.5				11	270	12.5				3.1	
12	325	7.0			2.5				12	280	12.2				3.0	
13	295	7.5			2.5				13	270	11.7				2.9	
14	295	7.6			2.5				14	280	12.1				3.0	
15	240	7.7			2.5				15	285	11.7				3.0	
16	230	7.5			2.5				16	275	11.2				2.9	
17	260	7.5			2.5				17	275	11.6				2.9	
18	300	7.2			2.5				18	280	11.5				2.9	
19	380	9.0			1.8				19	11.3					3.0	
20	360	9.0			4.0				20	10.9					3.0	
21	280	8.8			4.2				21	10.8					2.8	
22	22	9.2			3.8				22	10.4					2.0	
23	230	9.8			2.9				23	10.0					3.0	

Time: 120.0°W.  
Sweep: Manual operation.

Time: 157.5°W.  
Sweep: 2.0 Mc to 16.0 Mc. Manual operation.

Table 17

Kermadec Is. (29.3°S., 177.9°W.) September 1946

Time	hF2	fF2	hF1	fF1	hF	fF	foE	FE	F2-M3000
00									
01									
02									
03									
04									
05	300	5.6							
06	275	8.2	150	2.4	2.8				
07	300	9.0	275	4.3	3.1				
08	305	9.8	270	4.8	3.1				
09	200	10.2	270	5.0	2.9				
10	220	10.4	250	4.9	2.6				
11	320	10.4	270	4.9	2.8				
12	320	10.1	270	4.8	2.6				
13	220	9.4	255	4.7	2.6				
14	310	9.4	265	4.6	3.0				
15	300	9.0	275	4.2	2.8				
16	285	8.6			2.8				
17	275	8.6			2.8				
18	300	7.6			2.6				
19									
20									
21									
22									
23									

Time: 180.0°E.  
Sweep: 1.8 Mc to 12.0 Mc. Manual operation.

Table 19

August 1946

Trondheim, Norway (69.7°N., 18.9°E.)

Time	hF2	fF2	hF1	fF1	hF	fF	foE	FE	F2-M3000
00									
01									
02									
03									
04									
05	347	6.6	4.5		2.9				
06		6.5	4.3		3.0				
07	344	6.5	4.6		3.1				
08	341	6.5	4.6		3.2				
09	338	6.6	4.8		3.2				
10	352	6.6	4.6		3.2				
11	370	6.5	4.6		3.2				
12	358	6.2	4.6		3.2				
13	322	6.3	4.6		3.1				
14	238	6.4	4.6		3.1				
15	315	6.3	4.4		2.9				
16	300	6.4	4.0		2.7				
17	286	6.3	2.7		2.8				
18	300	6.2	4.6		2.8				
19	290	5.9			2.9				
20	310	(5.6)			2.8				
21									
22									
23									

Time: 0.0  
Sweep: 0.8 Mc to 11.4 Mc in five minutes.

Table 19

August 1946

Trondheim, Norway (69.7°N., 18.9°E.)

Time	hF2	fF2	hF1	fF1	hF	fF	foE	FE	F2-M3000
00									
01									
02									
03									
04									
05	347	6.6	4.5		2.9				
06		6.5	4.3		3.0				
07	344	6.5	4.6		3.1				
08	341	6.5	4.6		3.2				
09	338	6.6	4.8		3.2				
10	352	6.6	4.6		3.2				
11	370	6.5	4.6		3.2				
12	358	6.2	4.6		3.2				
13	322	6.3	4.6		3.1				
14	238	6.4	4.6		3.1				
15	315	6.3	4.4		2.9				
16	300	6.4	4.0		2.7				
17	286	6.3	2.7		2.8				
18	300	6.2	4.6		2.8				
19	290	5.9			2.9				
20	310	(5.6)			2.8				
21									
22									
23									

Time: 0.0  
Sweep: 0.8 Mc to 11.4 Mc in five minutes.Time: 30.0°E.  
Sweep: 0.8 Mc from only 5 to 8 values; the station ceased operating after August 14, 1946.

\*Extent of E. (See page 3, last paragraph.)

Table 22

Okinawa I. (26.3°N, 127.8°E)

August 1946

Leyte, Philippine Is. (11.0°N, 125.0°E)

August 1946

Time	h <sup>o</sup> F2	f <sup>o</sup> F2	h <sup>o</sup> F1	f <sup>o</sup> F1	h <sup>o</sup> E	f <sup>o</sup> E	FEs	F2-M3000
00	9.1	3.9	2.6	0.6	9.4	2.6	2.3	2.8
01	9.1	4.1	2.7	0.8	8.8	3.0		
02	8.9	3.8	2.8	0.9	8.3	3.1		
03	7.3	3.4	2.9	0.9	7.7	3.1		
04	7.0	3.5	2.8	0.8	6.2	3.2		
05	6.4	3.0	3.0	0.7	6.8	3.3		
06	7.1	3.8	3.0	0.6	5.9	3.2		
07	8.0	4.2	3.3	0.7	7.2	3.1		
08	8.3	5.0	3.1	0.8	9.2	3.0		
09	8.4	3.5	5.2	0.9	10.1	3.0		
10	9.0	(5.6)	3.7	5.1	10	2.7		
11	10.2	4.0	5.3	2.6	11	2.4		
12	10.8	5.6	4.0	5.2	12	2.3		
13	11.2	5.8	4.0	5.2	13	2.3		
14	12.0	5.7	4.0	5.0	14	2.2		
15	12.0	5.7	3.8	5.0	15	2.3		
16	12.0	5.3	3.6	5.4	16	2.4		
17	12.2	5.0	3.6	5.4	17	2.4		
18	11.9	5.2	3.1	5.4	18	2.4		
19	11.3	4.8	2.5	5.2	19	2.4		
20	10.2	4.0	4.6	4.6	20	2.3		
21	9.1	4.0	4.0	4.6	21	2.3		
22	9.1	4.2	4.2	4.6	22	2.4		
23	9.3	3.6	3.6	4.6	23	2.4		

Time: 135.0°E.  
Sweep: Manual operation.

Table 23

Time	* f <sup>o</sup> F2	h <sup>o</sup> F2	f <sup>o</sup> F1	h <sup>o</sup> F1	f <sup>o</sup> F1	h <sup>o</sup> E	f <sup>o</sup> E	FEs	F2-M3000
00	-	-	-	-	-	-	-	-	-
01	-	-	-	-	-	-	-	-	-
02	-	-	-	-	-	-	-	-	-
03	-	-	-	-	-	-	-	-	-
04	-	-	-	-	-	-	-	-	-
05	-	-	-	-	-	-	-	-	-
06	-	-	-	-	-	-	-	-	-
07	230	7.8	3.8	2.9	2.9	2.5	2.5		
08	360	8.1	4.0	4.0	4.0	3.8	3.8		
09	360	8.0	4.0	4.0	4.0	3.8	3.8		
10	390	9.2	4.0	4.0	4.0	3.8	3.8		
11	390	9.6	4.2	4.2	4.2	4.0	4.0		
12	405	10.4	4.3	4.3	4.3	4.0	4.0		
13	290	10.6	3.8	3.8	3.8	3.5	3.5		
14	290	10.4	3.9	3.9	3.9	3.4	3.4		
15	390	10.2	4.2	4.2	4.2	3.7	3.7		
16	360	10.2	4.2	4.2	4.2	3.7	3.7		
17	360	9.8	4.1	4.1	4.1	3.6	3.6		
18	330	9.6	4.2	4.2	4.2	3.7	3.7		
19	330	9.0	3.5	3.5	3.5	3.0	3.0		
20	330	8.4	3.4	3.4	3.4	2.8	2.8		
21	360	7.8	2.0	2.0	2.0	1.5	1.5		
22	360	7.3	3.3	3.3	3.3	2.2	2.2		
23	330	7.1	-	-	-	2.3	2.3		

Time: 135.0°E.  
Sweep: Manual operation.

Table 24

Time	* h <sup>o</sup> F2	f <sup>o</sup> F2	h <sup>o</sup> F1	f <sup>o</sup> F1	h <sup>o</sup> E	f <sup>o</sup> E	FEs	F2-M3000
00	-	-	-	-	-	-	-	-
01	-	-	-	-	-	-	-	-
02	-	-	-	-	-	-	-	-
03	-	-	-	-	-	-	-	-
04	-	-	-	-	-	-	-	-
05	-	-	-	-	-	-	-	-
06	-	-	-	-	-	-	-	-
07	09	7.0	7.0	7.0	7.0	5.1	5.1	2.5
08	360	7.8	6.7	6.7	6.7	390	390	
09	360	8.0	6.0	6.0	6.0	390	390	
10	390	9.2	7.0	7.0	7.0	390	390	
11	390	9.6	7.0	7.0	7.0	360	360	
12	405	10.4	7.0	7.0	7.0	360	360	
13	290	10.6	6.8	6.8	6.8	360	360	
14	290	10.4	6.9	6.9	6.9	360	360	
15	390	10.2	6.2	6.2	6.2	360	360	
16	360	10.2	6.2	6.2	6.2	360	360	
17	360	9.8	5.1	5.1	5.1	420	420	
18	330	9.6	4.2	4.2	4.2	450	450	
19	330	9.0	3.5	3.5	3.5	420	420	
20	330	8.4	3.4	3.4	3.4	420	420	
21	360	7.8	2.0	2.0	2.0	405	405	
22	360	7.3	3.3	3.3	3.3	420	420	
23	330	7.1	-	-	-	390	390	

Time: 135.0°E.  
Sweep: Manual operation.

Table 25

Time	* h <sup>o</sup> F2	f <sup>o</sup> F2	h <sup>o</sup> F1	f <sup>o</sup> F1	h <sup>o</sup> E	f <sup>o</sup> E	FEs	F2-M3000
00	-	-	-	-	-	-	-	-
01	-	-	-	-	-	-	-	-
02	-	-	-	-	-	-	-	-
03	-	-	-	-	-	-	-	-
04	-	-	-	-	-	-	-	-
05	-	-	-	-	-	-	-	-
06	-	-	-	-	-	-	-	-
07	09	7.0	7.0	7.0	7.0	5.1	5.1	2.5
08	360	7.8	6.0	6.0	6.0	390	390	
09	360	8.0	6.0	6.0	6.0	390	390	
10	390	9.2	7.0	7.0	7.0	420	420	
11	390	9.6	7.0	7.0	7.0	450	450	
12	405	10.4	7.0	7.0	7.0	420	420	
13	290	10.6	6.8	6.8	6.8	420	420	
14	290	10.4	6.9	6.9	6.9	420	420	
15	390	10.2	6.2	6.2	6.2	420	420	
16	360	10.2	6.2	6.2	6.2	420	420	
17	360	9.8	5.1	5.1	5.1	450	450	
18	330	9.6	4.2	4.2	4.2	420	420	
19	330	9.0	3.5	3.5	3.5	420	420	
20	330	8.4	3.4	3.4	3.4	420	420	
21	360	7.8	2.0	2.0	2.0	405	405	
22	360	7.3	3.3	3.3	3.3	420	420	
23	330	7.1	-	-	-	390	390	

Time: 135.0°E.  
Sweep: Manual operation.

Table 26

Time	* h <sup>o</sup> F2	f <sup>o</sup> F2	h <sup>o</sup> F1	f <sup>o</sup> F1	h <sup>o</sup> E	f <sup>o</sup> E	FEs	F2-M3000
00	-	-	-	-	-	-	-	-
01	-	-	-	-	-	-	-	-
02	-	-	-	-	-	-	-	-
03	-	-	-	-	-	-	-	-
04	-	-	-	-	-	-	-	-
05	-	-	-	-	-	-	-	-
06	-	-	-	-	-	-	-	-
07	09	7.0	7.0	7.0	7.0	5.1	5.1	2.5
08	360	7.8	6.0	6.0	6.0	390	390	
09	360	8.0	6.0	6.0	6.0	390	390	
10	390	9.2	7.0	7.0	7.0	420	420	
11	390	9.6	7.0	7.0	7.0	450	450	
12	405	10.4	7.0	7.0	7.0	420	420	
13	290	10.6	6.8	6.8	6.8	420	420	
14	290	10.4	6.9	6.9	6.9	420	420	
15	390	10.2	6.2	6.2	6.2	420	420	
16	360	10.2	6.2	6.2	6.2	420	420	
17	360	9.8	5.1	5.1	5.1	450	450	
18	330	9.6	4.2	4.2	4.2	420	420	
19	330	9.0	3.5	3.5	3.5	420	420	
20	330	8.4	3.4	3.4	3.4	420	420	
21	360	7.8	2.0	2.0	2.0	405	405	
22	360	7.3	3.3	3.3	3.3	420	420	
23	330	7.1	-	-	-	390	390	

Time: 135.0°E.  
Sweep: Manual operation.

Table 27

Time	* h <sup>o</sup> F2	f <sup>o</sup> F2	h <sup>o</sup> F1	f <sup>o</sup> F1	h <sup>o</sup> E	f <sup>o</sup> E	FEs	F2-M3000
00	-	-	-	-	-	-	-	-
01	-	-	-	-	-	-	-	-
02	-	-	-	-	-	-	-	-
03	-	-	-	-	-	-	-	-
04	-	-	-	-	-	-	-	-
05	-	-	-	-	-	-	-	-
06	-	-	-	-	-	-	-	-
07	09	7.0	7.0	7.0	7.0	5.1	5.1	2.5
08	360	7.8	6.0	6.0	6.0	390	390	
09	360	8.0	6.0	6.0	6.0	390	390	
10	390	9.2	7.0	7.0	7.0	420	420	
11	390	9.6	7.0	7.0	7.0	450	450	
12	405	10.4	7.0	7.0	7.0	420	420	
13	290	10.6	6.8	6.8				

Table 25

Mumbai, India (19.0°N, 73.0°E)		July 1946					
T. (°)	h <sup>1</sup> E2	h <sup>1</sup> N1	h <sup>1</sup> N2	h <sup>1</sup> E	f <sup>1</sup> N1	f <sup>1</sup> N2	R <sup>1</sup> -R <sup>3000</sup>
2.6							
1.2	3.3						
1.1	(300) (6.5)						
1.0	315	7.9					
0.9	390	8.5					
0.8	450	9.5					
0.7	480	10.2					
0.6	540	11.6					
0.5	510	12.1					
0.4	495	12.5					
0.3	510	13.0					
0.2	480	13.3					
0.1	450	13.7					
0.0	420	13.4					
-0.1	420	12.8					
-0.2	420	12.0					
-0.3	450	10.8					
-0.4	435	9.4					
-0.5	420	8.9					
-0.6							
-0.7							
-0.8							
-0.9							
-1.0							
-1.1							
-1.2							
-1.3							
-1.4							
-1.5							
-1.6							
-1.7							
-1.8							
-1.9							
-2.0							
-2.1							
-2.2							
-2.3							
-2.4							
-2.5							
-2.6							
-2.7							
-2.8							
-2.9							
-3.0							
-3.1							
-3.2							
-3.3							
-3.4							
-3.5							
-3.6							
-3.7							
-3.8							
-3.9							
-4.0							
-4.1							
-4.2							
-4.3							
-4.4							
-4.5							
-4.6							
-4.7							
-4.8							
-4.9							
-5.0							
-5.1							
-5.2							
-5.3							
-5.4							
-5.5							
-5.6							
-5.7							
-5.8							
-5.9							
-6.0							
-6.1							
-6.2							
-6.3							

Table 26

Madras, India (12.0°N, 80.2°E)		July 1946					
T. (°)	h <sup>1</sup> E2	h <sup>1</sup> N1	h <sup>1</sup> N2	h <sup>1</sup> E	f <sup>1</sup> N1	f <sup>1</sup> N2	R <sup>1</sup> -R <sup>3000</sup>
2.6							
2.5	3.3						
2.4	(300) (6.5)						
2.3	315	7.9					
2.2	390	8.5					
2.1	450	9.5					
2.0	480	10.2					
1.9	540	11.6					
1.8	510	12.1					
1.7	495	12.5					
1.6	510	13.0					
1.5	480	13.3					
1.4	450	13.7					
1.3	420	13.4					
1.2	420	12.8					
1.1	420	12.0					
1.0	450	10.8					
0.9	435	9.4					
0.8	420	8.9					
0.7							
0.6							
0.5							
0.4							
0.3							
0.2							
0.1							
0.0							
-0.1							
-0.2							
-0.3							
-0.4							
-0.5							
-0.6							
-0.7							
-0.8							
-0.9							
-1.0							
-1.1							
-1.2							
-1.3							
-1.4							
-1.5							
-1.6							
-1.7							
-1.8							
-1.9							
-2.0							
-2.1							
-2.2							
-2.3							
-2.4							
-2.5							
-2.6							
-2.7							
-2.8							
-2.9							
-3.0							
-3.1							
-3.2							
-3.3							
-3.4							
-3.5							
-3.6							
-3.7							
-3.8							
-3.9							
-4.0							
-4.1							
-4.2							
-4.3							
-4.4							
-4.5							
-4.6							
-4.7							
-4.8							
-4.9							
-5.0							
-5.1							
-5.2							
-5.3							
-5.4							
-5.5							
-5.6							
-5.7							
-5.8							
-5.9							
-6.0							
-6.1							
-6.2							
-6.3							

Local  
Sweep: Manual operation.  
Height at 0.83 ft<sup>2</sup>.  
3000, average values; other columns, median values.

Table 27

Tonga I. (21.3°S, 159.8°W)		July 1946					
T. (°)	h <sup>1</sup> E2	h <sup>1</sup> N1	h <sup>1</sup> N2	h <sup>1</sup> E	f <sup>1</sup> N1	f <sup>1</sup> N2	R <sup>1</sup> -R <sup>3000</sup>
5.3							
4.7	3.0						
4.3	3.0						
4.0	2.9						
3.5	2.8						
3.2	2.8						
3.0	2.7						
2.7	2.7						
2.4	2.7						
2.1	2.7						
1.9	2.7						
1.6	2.7						
1.3	2.7						
1.0	2.7						
0.7	2.7						
0.4	2.7						
0.1	2.7						
-0.2	2.7						
-0.5	2.7						
-0.8	2.7						
-1.1	2.7						
-1.4	2.7						
-1.7	2.7						
-2.0	2.7						
-2.3	2.7						
-2.6	2.7						
-2.9	2.7						
-3.2	2.7						
-3.5	2.7						
-3.8	2.7						
-4.1	2.7						
-4.4	2.7						
-4.7	2.7						
-5.0	2.7						
-5.3	2.7						
-5.6	2.7						
-5.9	2.7						
-6.2	2.7						
-6.5	2.7						
-6.8	2.7						
-7.1	2.7						
-7.4	2.7						
-7.7	2.7						
-8.0	2.7						
-8.3	2.7						
-8.6	2.7						
-8.9	2.7						
-9.2	2.7						
-9.5	2.7						
-9.8	2.7						
-10.1	2.7						
-10.4	2.7						
-10.7	2.7						
-11.0	2.7						
-11.3	2.7						
-11.6	2.7						
-11.9	2.7						
-12.2	2.7						
-12.5	2.7						
-12.8	2.7						
-13.1	2.7						
-13.4	2.7						
-13.7	2.7						
-14.0	2.7						
-14.3	2.7						
-14.6	2.7						
-14.9	2.7						
-15.2	2.7						
-15.5	2.7						
-15.8	2.7						
-16.1	2.7						
-16.4	2.7				</td		



Table 34

Madras, India (13.0°N, 80.2°E)

June 1946

Time	* F2	F2	F2	F2	F2	F2	F2	F2	F2	F2	F2	F2	F2	F2	F2	F2	F2	F2
00																		
01																		
02																		
03																		
04																		
05																		
06																		
07	330	8.2																
08	375	9.2																
09	420	9.6																
10	480	9.6																
11	480	9.4																
12	540	9.2																
13	540	9.6																
14	540	9.8																
15	480	9.8																
16	480	10.5																
17	480	10.8																
18	450	11.0																
19	435	10.5																
20	480	(9.5)																
21	480	8.5																
22	450	7.8																
23																		

Time: Local.  
Sweep: Manual operation.  
Height at 0.83 fcp2.

\*\*#3000, average values; other columns, median values.

Table 34

Rarotonga I. (21.3°S, 159.8°W)

June 1946

Time	* F2	F2	F2	F2	F2	F2	F2	F2	F2	F2	F2	F2	F2	F2	F2	F2	F2	F2
00																		
01																		
02																		
03																		
04																		
05																		
06																		
07																		
08	265	3.6																
09	250	3.5																
10	255	3.7																
11	255	3.7																
12	248	3.7																
13	235	3.4																
14	235	3.0																
15	230	4.7																
16	240	4.2																
17	232	4.4																
18	230	4.5																
19	270	9.2																
20	265	9.4																
21	270	9.6																
22	250	9.5																
23	245	9.5																
24	225	8.5																
25	210	6.7																
26	232	5.1																
27	230	3.8																
28	240	3.2																
29	245	3.2																
30	262	3.2																
31	265	3.5																

Time: 157.5°W.  
Sweep: 2.0 Mc to 16.0 Mc. Manual operation.

Table 35

Rarotonga I. (21.3°S, 159.8°W)

June 1946

Time	* F2	F2	F2	F2	F2	F2	F2	F2	F2	F2	F2	F2	F2	F2	F2	F2	F2	F2
00																		
01																		
02																		
03																		
04																		
05																		
06																		
07																		
08	265	7.2																
09	250	8.5																
10	250	8.7																
11	255	9.0																
12	270	9.2																
13	265	9.4																
14	270	9.6																
15	250	9.5																
16	245	9.5																
17	225	8.5																
18	210	6.7																
19	232	5.1																
20	230	3.8																
21	240	3.2																
22	262	3.2																
23	265	3.5																

Time: 120.0°E.  
Sweep: 16.0 Mc to 0.5 Mc in fifteen minutes.

Table 35

Time	* F2	F2	F2	F2	F2	F2	F2	F2	F2	F2	F2	F2	F2	F2	F2	F2	F2	F2
00																		
01																		
02																		
03																		
04																		
05																		
06																		
07																		
08	265	3.6																
09	250	3.5																
10	255	3.7																
11	255	3.7																
12	248	3.7																
13	235	3.4																
14	235	3.0																
15	230	4.7																
16	240	4.2																
17	232	4.4																
18	230	4.5																
19	270	9.2																
20	265	9.4																
21	270	9.6																
22	250	9.5																
23	245	9.5																
24	225	8.5																
25	210	6.7																
26	232	5.1																
27	230	3.8																
28	240	3.2																

Table 37

Campbell I. ( $52.5^{\circ}$ S,  $169.2^{\circ}$ E)

May 1946

Time	$h^{\circ}F_2$	$f^{\circ}F_2$	$h^{\circ}F_1$	$f^{\circ}F_1$	$h^{\circ}E$	$f^{\circ}E$	$F_{2-M3000}$
00	00	226	6.6				
01	01	229	6.0				
02	02	235	5.0				
03	03	247	4.4				
04	04	264	3.8				
05	05	263	3.4				
06	06	241	4.4	1.5			
07	07	261	6.8	2.4	4.1		
08	08	289	7.7	2.3	4.3		
09	09	312	8.0	2.0	4.4		
10	10	334	7.7	2.04	4.5		
11	11	348	7.4	1.98	4.5		
12	12	353	7.4	1.97	4.5		
13	13	344	7.5	1.99	4.5		
14	14	331	7.7	1.98	4.4		
15	15	308	8.0	1.97	4.3		
16	16	292	8.2	2.11	4.2		
17	17	242	8.2	2.39	4.0		
18	18	260	8.2				
19	19	294	7.5				
20	20	269	7.4				
21	21	241	7.6				
22	22	226	7.6				
23	23	224	7.0				

Time:  $165.0^{\circ}$ E.  
Sweep: 1.0 Mc to 15.0 Mc. Manual operation.

Table 39\*

Huancayo, Peru ( $12.0^{\circ}$ S,  $75.3^{\circ}$ W)

September 1943

August 1943

Time	$h^{\circ}F_2$	$f^{\circ}F_2$	$h^{\circ}F_1$	$f^{\circ}F_1$	$h^{\circ}E$	$f^{\circ}E$	$F_{2-M3000}$
00	00	226	6.6				
01	01	229	6.0				
02	02	235	5.0				
03	03	247	4.4				
04	04	264	3.8				
05	05	263	3.4				
06	06	241	4.4	1.5			
07	07	261	6.8	2.4	4.1		
08	08	289	7.7	2.3	4.3		
09	09	312	8.0	2.0	4.4		
10	10	334	7.7	2.04	4.5		
11	11	348	7.4	1.98	4.5		
12	12	353	7.4	1.97	4.5		
13	13	344	7.5	1.99	4.5		
14	14	331	7.7	1.98	4.4		
15	15	308	8.0	1.97	4.3		
16	16	292	8.2	2.11	4.2		
17	17	242	8.2	2.39	4.0		
18	18	260	8.2				
19	19	294	7.5				
20	20	269	7.4				
21	21	241	7.6				
22	22	226	7.6				
23	23	224	7.0				

Time:  $165.0^{\circ}$ E.  
Sweep: 1.0 Mc to 13.0 Mc in one minute, fifty-five seconds.

Table 40\*

Huancayo, Peru ( $12.0^{\circ}$ S,  $75.3^{\circ}$ W)

Time	$h^{\circ}F_2$	$f^{\circ}F_2$	$h^{\circ}F_1$	$f^{\circ}F_1$	$h^{\circ}E$	$f^{\circ}E$	$F_{2-M3000}$
00	00	232	5.8				
01	01	236	5.4				
02	02	247	4.8				
03	03	255	4.3				
04	04	256	3.8				
05	05	266	3.1				
06	06	258	3.1				
07	07	251	5.6				
08	08	311	6.7				
09	09	325	7.1				
10	10	356	7.0				
11	11	373	6.8				
12	12	387	6.8				
13	13	374	6.7				
14	14	368	6.8				
15	15	351	7.0				
16	16	318	7.3				
17	17	254	7.5				
18	18	260	7.6				
19	19	278	7.1				
20	20	266	6.9				
21	21	255	6.8				
22	22	242	6.5				
23	23	237	6.0				

Time:  $160.0^{\circ}$ E.  
Sweep: 1.0 Mc to 13.0 Mc in one minute, fifty-five seconds.Time:  $75.0^{\circ}$ W.  
Sweep: 1.0 Mc to 0.5 Mc in fifteen minutes.  
\*Average values.Time:  $75.0^{\circ}$ W.  
Sweep: 1.0 Mc to 0.5 Mc in fifteen Minutes.  
\*Average values.

Table 6.1

Huancayo, Peru (12.0°S, 75.3°W)

July 1943

Huancayo, Peru (12.0°S, 75.3°W)

June 1943

Time	b'F <sub>2</sub>	F <sub>0</sub> F <sub>2</sub>	h'F <sub>1</sub>	F <sub>0</sub> F <sub>1</sub>	h'F <sub>0</sub>	F <sub>0</sub> F <sub>0</sub>	F <sub>2</sub> -M3000
00	24.5	4.6					
01	25.2	4.3					
02	25.5	3.8					
03	25.6	3.6					
04	26.1	2.9					
05	26.3	2.4					
06	26.9	2.5					
07	25.0	4.7	3.8	2.0			
08	25.6	5.7	2.1	4.1	2.6		
09	37.0	6.1	2.0	4.2	2.9		
10	39.2	6.1	20.3	4.3	3.2		
11	41.3	5.9	20.9	4.3	3.4		
12	42.4	6.0	20.3	4.3	3.4		
13	40.0	6.2	20.2	4.3	3.5		
14	39.1	6.4	20.3	4.3	3.2		
15	37.5	6.6	20.7	4.2	2.9		
16	33.6	6.6	21.9	4.2	2.5		
17	25.4	6.7	23.5	4.0	2.0		
18	26.5	6.6			1.0		
19	27.6	6.2			1.0		
20	26.7	6.1					
21	25.3	5.9					
22	25.0	5.1					
23	24.6	4.8					

Time: 75.0°W.  
 Sweep: 16.0 Mc to 0.5 Mc in fifteen minutes.  
 \*Average values.

Table 6.3\*

Huancayo, Peru (12.0°S, 75.3°W)

May 1943

Huancayo, Peru (12.0°S, 75.3°W)

June 1943

Time	b'F <sub>2</sub>	F <sub>0</sub> F <sub>2</sub>	h'F <sub>1</sub>	F <sub>0</sub> F <sub>1</sub>	h'F <sub>0</sub>	F <sub>0</sub> F <sub>0</sub>	F <sub>2</sub> -M3000
00	24.0	5.0					
01	22.2	4.7					
02	23.1	4.4					
03	26.4	3.8					
04	26.9	3.5					
05	27.5	3.2					
06	26.2	3.7					
07	27.4	6.1	2.1	4.3	2.2		
08	31.3	7.3	2.0	4.5	2.8		
09	33.8	7.7	2.6	4.5	3.0		
10	36.3	7.4	2.0	4.5	2.4		
11	37.6	7.2	2.1	4.5	2.4		
12	38.8	6.9	2.8	4.5	3.5		
13	37.9	7.1	2.6	4.5	3.4		
14	36.6	7.1	2.8	4.4	3.2		
15	34.1	7.3	2.0	4.4	2.9		
16	31.9	7.5	2.2	4.4	2.6		
17	26.7	7.4	2.2	4.4	1.9		
18	28.5	7.1			1.1		
19	29.6	6.7			1.1		
20	27.5	6.6					
21	25.6	6.7					
22	24.1	6.1					
23	24.0	5.3					

Time: 75.0°W.  
 Sweep: 16.0 Mc to 0.5 Mc in fifteen minutes.  
 \*Average values.

Table 6.4\*

Huancayo, Peru (12.0°S, 75.3°W)

June 1943

Time	b'F <sub>2</sub>	F <sub>0</sub> F <sub>2</sub>	h'F <sub>1</sub>	F <sub>0</sub> F <sub>1</sub>	h'F <sub>0</sub>	F <sub>0</sub> F <sub>0</sub>	F <sub>2</sub> -M3000
00	24.6	4.2					
01	25.1	4.0					
02	25.3	3.9					
03	26.9	3.5					
04	27.8	3.1					
05	28.1	2.7					
06	26.6	2.9					
07	27.4	5.3					
08	31.2	6.4					
09	35.1	6.8					
10	38.5	6.6					
11	40.7	6.3					
12	41.5	6.2					
13	40.5	6.4					
14	38.3	6.6					
15	36.5	6.7					
16	32.7	6.8					
17	28.2	6.9					
18	27.0	6.6					
19	27.8	6.0					
20	27.5	6.0					
21	25.5	6.1					
22	24.1	5.3					
23	23.6	5.3					

Time: 75.0°W.  
 Sweep: 16.0 Mc to 0.5 Mc in fifteen minutes.  
 \*Average values.

Time: 75.0°W.  
 Sweep: 16.0 Mc to 0.5 Mc in fifteen minutes.  
 \*Average values.

Time: 75.0°W.  
 Sweep: 16.0 Mc to 0.5 Mc in fifteen minutes.  
 \*Average values.

Table 65\*

Huancayo, Peru (12.0°S, 75.3°W)

March 1943

Time

Time	h F2	f <sub>2</sub>	h F1	f <sub>1</sub>	h F0	f <sub>0</sub>	f <sub>2-M3000</sub>
00	246	8.1					
01	238	5.0					
02	233	5.0					
03	244	4.0					
04	257	3.6					
05	262	2.5					
06	279	2.3					
07	264	7.1	2.7	4.2	2.5	0.9	
08	269	2.4	2.4	4.4	3.0	1.4	
09	213	9.2	2.8	4.6	3.5	2.0	
10	338	9.0	2.8	4.7	3.7	2.5	
11	351	8.7	2.1	4.7	3.8	2.0	
12	356	8.6	2.0	4.7	3.8	2.0	
13	344	8.8	2.0	4.7	3.8	2.0	
14	334	9.1	2.0	4.6	3.7	1.9	
15	317	9.5	2.0	4.5	3.5	1.9	
16	300	9.8	2.3	4.6	3.0	2.5	
17	282	9.7	2.3	4.6	3.2	2.5	
18	270	9.4	2.3	4.6	3.2	2.5	
19	305	9.0					
20	301	8.9					
21	273	9.0					
22	262	9.0					
23	249	8.8					

Time: 75.0°W  
Sweep: 16.0 Mc to 0.5 Mc in fifteen minutes.  
\*Average values.

Table 67\*

Huancayo, Peru (12.0°S, 75.3°W)

January 1943

Time	h F2	f <sub>2</sub>	h F1	f <sub>1</sub>	h F0	f <sub>0</sub>	f <sub>2-M3000</sub>
00	286	4.8					
01	287	3.9					
02	291	3.2					
03	289	2.7					
04	284	2.4					
05	281	1.9					
06	254	4.6					
07	283	6.8	2.2	4.7	2.6	1.8	
08	305	7.8	2.7	4.4	3.0	2.4	
09	330	8.2	2.3	4.5	3.4	2.3	
10	370	8.3	2.0	4.5	3.5	2.0	
11	380	8.4	2.0	4.6	3.6	2.0	
12	396	8.3	2.0	4.6	3.6	2.0	
13	393	8.3	1.9	4.5	3.6	2.0	
14	370	8.6	1.9	4.4	3.5	2.0	
15	345	9.0	1.9	4.4	3.2	1.9	
16	333	9.1	2.0	4.3	3.0	1.9	
17	298	7.0	2.3	4.3	2.6	1.7	
18	260	9.0					
19	265	8.6					
20	288	7.6					
21	304	6.5					
22	306	5.8					
23	302	5.4					

Time: 75.0°W  
Sweep: 16.0 Mc to 0.5 Mc in fifteen minutes.  
\*Average values.

Table 68\*

Huancayo, Peru (12.0°S, 75.3°W)

December 1942

Time	h F2	f <sub>2</sub>	h F1	f <sub>1</sub>	h F0	f <sub>0</sub>	f <sub>2-M3000</sub>
00	276	5.8					
01	258	5.2					
02	256	4.2					
03	258	3.4					
04	256	2.8					
05	275	2.2					
06	255	1.5					
07	274	4.2					
08	305	7.8	2.7	4.4	4.2	2.4	
09	331	8.2	2.7	4.4	4.2	2.4	
10	354	8.2	2.7	4.4	4.2	2.4	
11	363	8.2	2.7	4.4	4.2	2.4	
12	367	8.3	2.7	4.4	4.2	2.4	
13	361	8.6	2.7	4.4	4.2	2.4	
14	344	9.0	2.7	4.4	4.2	2.4	
15	331	9.2	2.7	4.4	4.2	2.4	
16	322	9.4	2.7	4.4	4.2	2.4	
17	295	9.3	2.7	4.4	4.2	2.4	
18	263	9.0	2.7	4.4	4.2	2.4	
19	478	8.5	2.7	4.4	4.2	2.4	
20	286	8.0	2.7	4.4	4.2	2.4	
21	279	7.4	2.7	4.4	4.2	2.4	
22	283	7.0	2.7	4.4	4.2	2.4	
23	286	6.3	2.7	4.4	4.2	2.4	

Time: 75.0°W  
Sweep: 16.0 Mc to 0.5 Mc in fifteen minutes.  
\*Average values.

Table 69\*

Huancayo, Peru (12.0°S, 75.3°W)

February 1943

Time	h F2	f <sub>2</sub>	h F1	f <sub>1</sub>	h F0	f <sub>0</sub>	f <sub>2-M3000</sub>
00	276	5.8					
01	258	5.2					
02	256	4.2					
03	258	3.4					
04	256	2.8					
05	275	2.2					
06	255	1.5					
07	274	4.2					
08	305	7.8	2.7	4.4	4.2	2.4	
09	331	8.2	2.7	4.4	4.2	2.4	
10	354	8.2	2.7	4.4	4.2	2.4	
11	363	8.2	2.7	4.4	4.2	2.4	
12	367	8.3	2.7	4.4	4.2	2.4	
13	361	8.6	2.7	4.4	4.2	2.4	
14	344	9.0	2.7	4.4	4.2	2.4	
15	331	9.2	2.7	4.4	4.2	2.4	
16	322	9.4	2.7	4.4	4.2	2.4	
17	295	9.3	2.7	4.4	4.2	2.4	
18	263	9.0	2.7	4.4	4.2	2.4	
19	478	8.5	2.7	4.4	4.2	2.4	
20	286	8.0	2.7	4.4	4.2	2.4	
21	283	7.6	2.7	4.4	4.2	2.4	
22	304	6.5	2.7	4.4	4.2	2.4	
23	306	5.8	2.7	4.4	4.2	2.4	

Time: 75.0°W  
Sweep: 16.0 Mc to 0.5 Mc in fifteen minutes.  
\*Average values.

Table 70\*

Huancayo, Peru (12.0°S, 75.3°W)

February 1943

Time	h F2	f <sub>2</sub>	h F1	f <sub>1</sub>	h F0	f <sub>0</sub>	f <sub>2-M3000</sub>
00	276	5.8					
01	258	5.2					
02	256	4.2					
03	258	3.4					
04	256	2.8					
05	275	2.2					
06	255	1.5					
07	274	4.2					
08	305	7.8	2.7	4.4	4.2	2.4	
09	331	8.2	2.7	4.4	4.2	2.4	
10	354	8.2	2.7	4.4	4.2	2.4	
11	363	8.2	2.7	4.4	4.2	2.4	
12	367	8.3	2.7	4.4	4.2	2.4	
13	361	8.6	2.7	4.4	4.2	2.4	
14	344	9.0	2.7	4.4	4.2	2.4	
15	331	9.2	2.7	4.4	4.2	2.4	
16	322	9.4	2.7	4.4	4.2	2.4	
17	295	9.3	2.7	4.4	4.2	2.4	
18	263	9.0	2.7	4.4	4.2	2.4	
19	478	8.5	2.7	4.4	4.2	2.4	
20	286	8.0	2.7	4.4	4.2	2.4	
21	283	7.6	2.7	4.4	4.2	2.4	
22	304	6.5	2.7	4.4	4.2	2.4	
23	306	5.8	2.7	4.4	4.2	2.4	

Time: 75.0°W  
Sweep: 16.0 Mc to 0.5 Mc in fifteen minutes.  
\*Average values.

Table 71\*

Huancayo, Peru (12.0°S, 75.3°W)

February 1943

Time	h F2	f <sub>2</sub>	h F1	f <sub>1</sub>	h F0	f <sub>0</sub>	f <sub>2-M3000</sub>
00	276	5.8					
01	258	5.2					
02	256	4.2					
03	258	3.4					
04	256	2.8					
05	275	2.2					
06	255	1.5					
07	274	4.2					
08	305	7.8	2.7	4.4	4.2	2.4	
09	331	8.2	2.7	4.4	4.2	2.4	
10	354	8.2	2.7	4.4	4.2	2.4	
11	363	8.2	2.7	4.4	4.2	2.4	
12	367	8.3	2.7	4.4	4.2	2.4	
13	361	8.6	2.7	4.4	4.2	2.4	
14	344	9.0	2.7	4.4	4.2	2.4	
15	331	9.2	2.7	4.4	4.2	2.4	
16	322	9.4	2.7	4.4	4.2	2.4	
17	295	9.3	2.7	4.4	4.2	2.4	
18	263	9.0	2.7	4.4	4.2	2.4	
19	478	8.5	2.7	4.4	4.2	2.4	
20	286	8.0	2.7	4.4	4.2	2.4	
21	283	7.6	2.7	4.4	4.2	2.4	
22	304	6.5	2.7	4.4	4.2	2.4	
23	306	5.8	2.7	4.4	4.2	2.4	

Time: 75.0°W  
Sweep: 16.0 Mc to 0.5 Mc in fifteen minutes.  
\*Average values.

Table 72\*

Huancayo, Peru (12.0°S, 75.3°W)

February 1943

Time	h F2	f <sub>2</sub>	h F1	f <sub>1</sub>	h F
------	------	----------------	------	----------------	-----

Table 50\*

Huancayo, Peru (12.0°S, 75.3°W)

November 1942

October 1942

Table 50\*

Time	h <sup>1</sup> /2	f <sup>1</sup> /2	h <sup>1</sup> P <sub>1</sub>	f <sup>1</sup> P <sub>1</sub>	h <sup>1</sup> B	f <sup>1</sup> B	h <sup>1</sup> E	f <sup>1</sup> E	Y <sub>2</sub> -M <sub>3000</sub>
00	322	5.5							
01	301	4.9							
02	292	4.4							
03	288	3.8							
04	281	3.5							
05	271	3.3							
06	242	6.4							
07	277	8.2	2.7	4.4	2.1	2.7	2.0	2.0	2.0
08	301	9.1	213	4.5	3.1	3.5	4.5	4.3	2.5
09	316	9.5	210	4.7	3.5	3.6	3.1	2.8	3.1
10	335	9.5	206	4.7	3.6	3.7	3.17	9.3	4.6
11	340	9.5	202	4.7	3.7	3.7	10	34.3	207
12	336	9.6	198	4.7	3.7	3.7	11	33.9	4.7
13	331	9.8	201	4.6	3.6	3.5	12	34.8	202
14	331	9.8	202	4.6	3.6	3.5	13	34.1	4.7
15	324	10.0	205	4.5	3.3	3.3	14	33.1	3.6
16	299	9.9	211	4.4	2.8	2.8	15	31.6	4.6
17	252	9.6	250	4.1	2.4	2.4	16	29.6	3.5
18	262	9.2					17	24.4	3.0
19	284	8.9					18	25.9	2.4
20	297	8.1					19	28.0	1.9
21	330	7.3					20	28.4	1.1
22	341	6.5					21	27.1	
23	334	6.0					22	27.3	
							23	27.2	

Time: 75.0°W.  
 Sweep: 16.0 Mc to 0.5 Mc in fifteen minutes.  
 \*Average values.

Table 51\*

Huancayo, Peru (12.0°S, 75.3°W)

September 1942

August 1942

Table 51\*

Time	h <sup>1</sup> /2	f <sup>1</sup> /2	h <sup>1</sup> P <sub>1</sub>	f <sup>1</sup> P <sub>1</sub>	h <sup>1</sup> B	f <sup>1</sup> B	h <sup>1</sup> E	f <sup>1</sup> E	Y <sub>2</sub> -M <sub>3000</sub>
00	239	7.0							
01	226	6.7							
02	232	5.8							
03	243	4.9							
04	259	4.1							
05	266	3.6							
06	253	4.6							
07	264	6.8	232	4.2	2.4	2.4	05	25.9	4.0
08	305	7.7	215	4.4	2.9	2.9	06	25.0	3.4
09	222	8.0	210	4.5	2.3	2.3	07	25.5	4.0
10	351	7.7	204	4.6	3.5	3.5	08	31.7	4.4
11	373	7.5	201	4.6	3.6	3.6	09	32.2	4.2
12	370	7.5	198	4.6	3.6	3.6	10	36.9	4.0
13	363	7.7	198	4.6	3.6	3.6	11	39.4	3.4
14	349	8.0	199	4.5	3.5	3.4	12	40.2	3.5
15	325	8.3	199	4.3	3.1	3.1	13	40.7	4.4
16	308	8.4	202	4.2	2.8	2.8	14	38.7	3.4
17	242	8.4					15	36.4	3.6
18	263	8.4					16	33.3	3.0
19	300	7.8					17	24.9	2.6
20	289	7.5					18	26.6	2.2
21	256	7.6					19	27.0	1.1
22	241	7.6					20	26.7	
23	238	7.3					21	24.1	
							22	22.6	
							23	22.7	

Time: 75.0°W.  
 Sweep: 16.0 Mc to 0.5 Mc in fifteen minutes.  
 \*Average values.

Table 52\*

Huancayo, Peru (12.0°S, 75.3°W)

August 1942

Table 52\*

Time	h <sup>1</sup> /2	f <sup>1</sup> /2	h <sup>1</sup> P <sub>1</sub>	f <sup>1</sup> P <sub>1</sub>	h <sup>1</sup> B	f <sup>1</sup> B	h <sup>1</sup> E	f <sup>1</sup> E	Y <sub>2</sub> -M <sub>3000</sub>
00	233	5.2							
01	233	5.0							
02	238	4.5							
03	22.1	4.0							
04	25.0	3.4							
05	28.0	2.8							
06	25.9	3.0							
07	25.5	5.4							
08	31.7	6.4							
09	36.9	6.9							
10	36.9	6.8							
11	39.4	6.6							
12	40.2	6.6							
13	40.7	6.6							
14	38.7	6.8							
15	36.4	6.7							
16	33.3	6.8							
17	24.9	6.8							
18	26.6	6.8							
19	27.0	6.6							
20	26.7	6.2							
21	24.1	6.2							
22	22.6	6.2							
23	22.7	5.5							

Time: 75.0°W.  
 Sweep: 16.0 Mc to 0.5 Mc in fifteen minutes.  
 \*Average values.

Time	h <sup>1</sup> /2	f <sup>1</sup> /2	h <sup>1</sup> P <sub>1</sub>	f <sup>1</sup> P <sub>1</sub>	h <sup>1</sup> B	f <sup>1</sup> B	h <sup>1</sup> E	f <sup>1</sup> E	Y <sub>2</sub> -M <sub>3000</sub>
00	233	5.2							
01	233	5.0							
02	238	4.5							
03	22.1	4.0							
04	25.0	3.4							
05	28.0	2.8							
06	25.9	3.0							
07	25.5	5.4							
08	31.7	6.4							
09	36.9	6.9							
10	36.9	6.8							
11	39.4	6.6							
12	40.2	6.6							
13	40.7	6.6							
14	38.7	6.8							
15	36.4	6.7							
16	33.3	6.8							
17	24.9	6.8							
18	26.6	6.8							
19	27.0	6.6							
20	26.7	6.2							
21	24.1	6.2							
22	22.6	6.2							
23	22.7	5.5							

Time: 75.0°W.  
 Sweep: 16.0 Mc to 0.5 Mc in fifteen minutes.  
 \*Average values.

Time	h <sup>1</sup> /2	f <sup>1</sup> /2	h <sup>1</sup> P <sub>1</sub>	f <sup>1</sup> P <sub>1</sub>	h <sup>1</sup> B	f <sup>1</sup> B	h <sup>1</sup> E	f <sup>1</sup> E	Y <sub>2</sub> -M <sub>3000</sub>
00	233	5.2							
01	233	5.0							
02	238	4.5							
03	22.1	4.0							
04	25.0	3.4							
05	28.0	2.8							
06	25.9	3.0							
07	25.5	5.4							
08	31.7	6.4							
09	36.9	6.9							
10	36.9	6.8							
11	39.4	6.6							
12	40.2	6.6							
13	40.7	6.6							
14	38.7	6.8							
15	36.4	6.7							
16	33.3	6.8							
17	24.9	6.8							
18	26.6	6.8							
19	27.0	6.6							
20	26.7	6.2							
21	24.1	6.2							
22	22.6	6.2							
23	22.7	5.5							

Time: 75.0°W.  
 Sweep: 16.0 Mc to 0.5 Mc in fifteen minutes.  
 \*Average values.

Time	h <sup>1</sup> /2	f <sup>1</sup> /2	h <sup>1</sup> P <sub>1</sub>	f <sup>1</sup> P <sub>1</sub>	h <sup>1</sup> B	f <sup>1</sup> B	h <sup>1</sup> E	f <sup>1</sup> E	Y <sub>2</sub> -M <sub>3000</sub>
00	233	5.2							
01	233	5.0							
02	238	4.5							
03	22.1	4.0							
04	25.0	3.4							
05	28.0	2.8							
06	25.9	3.0							
07	25.5	5.4							
08	31.7	6.4							
09	36.								

Huancayo, Peru (12.0°S, 75.3°W)

Time	h'F2	f'F2	h'F1	f'F1	h'E	f'E	h'W	f'W	P2-M300
00	230	4.4							
01	237	4.2							
02	246	4.0							
03	253	3.7							
04	275	3.1							
05	270	2.6							
06	268	2.7							
07	239	5.0							
08	318	6.0							
09	254	6.4							
10	375	6.2							
11	403	6.2							
12	413	6.2							
13	365	6.3							
14	374	6.5							
15	357	6.8							
16	321	6.8							
17	239	6.9							
18	258	6.8							
19	275	6.2							
20	274	5.8							
21	252	5.8							
22	235	5.4							
23	232	4.8							

Time: 75.0%  
 Sweep: 16.0 Mc to 0.5 Mc in fifteen minutes.  
 \*Average values.

Huancayo, Peru ( $12.0^{\circ}\text{S}$ ,  $75.3^{\circ}\text{W}$ )

Plates: 72.0%  
Sheets: 16.0% to 0.5% in fifteen minutes.

Table 54\*

Huancayo, Peru (12.0°S, 75.3°W)

Time	h <sup>1/2</sup>	f <sup>1/2</sup>	h <sup>1/1</sup>	f <sup>1/1</sup>	h <sup>1/0</sup>	f <sup>1/0</sup>	h <sup>0/0</sup>	f <sup>0/0</sup>	F2-M3000
00	234	4.6							
01	236	4.3							
02	237	4.2							
03	245	3.7							
04	255	3.2							
05	269	2.8							
06	268	2.8							
07	236	5.2							
08	306	6.4	213	2.9	213	2.2			
09	328	6.8	207	2.7	207	2.7			
10	344	6.8	203	3.0	203	3.0			
11	380	6.6	200	3.4	200	3.4			
12	375	6.6	201	3.4	200	3.5			
13	370	7.0	196	4.4	196	4.5			
14	349	7.0	202	4.3	202	4.3			
15	343	7.1	201	4.3	201	4.3			
16	307	7.2	207	4.2	207	4.2			
17	238	7.2							
18	255	7.1							
19	267	6.3							
20	262	6.2							
21	246	6.4							
22	237	5.6							
23	231	5.2							

Times: 75.0%  
 Sweep: 16.0 Mc to 0.5 Mc in fifteen minutes.  
 \*Average values.

Table 56\*

Time	h <sub>1/2</sub>	f <sub>1/2</sub>	h <sub>1/1</sub>	f <sub>1/1</sub>	h <sub>1/0</sub>	f <sub>1/0</sub>	h <sub>2/0</sub>	f <sub>2/0</sub>	T2-M3000
00	222	8.4							
01	222	7.7							
02	228	6.2							
03	243	5.1							
04	253	4.4							
05	252	3.8							
06	259	4.9							
07	253	7.9	236	4.3	225	4.3	225	2.4	1.5
08	273	9.6	227	4.3	218	4.7	218	2.9	
09	293	10.4	218	4.7	211	4.8	211	3.4	
10	205	10.1	205	4.8	205	4.8	205	3.6	
11	313	9.6	205	4.8	204	4.9	204	3.7	
12	322	9.4	204	4.9	202	4.8	202	3.8	
13	319	9.6	202	4.8	203	4.7	203	3.8	
14	308	9.9	203	4.7	205	4.6	205	3.6	
15	293	10.2	205	4.6	217	4.4	217	3.3	
16	279	10.3	217	4.4					
17	250	10.0							
18	283	9.6							
19	320	8.8							
20	302	8.6							
21	267	8.9							
22	239	8.9							
23	226	8.7							

Time: 75.0%.

Huancayo, Peru (12.0°S, 75.3°W) June 1942

Time	h <sup>1/2</sup>	f <sup>1/2</sup>	h <sup>1/1</sup>	f <sup>1/1</sup>	h <sup>1/0</sup>	f <sup>1/0</sup>	h <sup>0/0</sup>	f <sup>0/0</sup>	F2-M3000
00	234	4.6							
01	236	4.3							
02	237	4.2							
03	245	3.7							
04	255	3.2							
05	269	2.8							
06	268	2.8							
07	236	5.2							
08	306	6.4	213	2.9	213	2.2			
09	328	6.8	207	2.7	207	2.7			
10	344	6.8	203	3.0	203	3.0			
11	380	6.6	200	3.4	200	3.4			
12	375	6.6	201	3.4	200	3.5			
13	370	7.0	196	4.4	196	4.5			
14	349	7.0	202	4.3	202	4.3			
15	343	7.1	201	4.3	201	4.3			
16	307	7.2	207	4.2	207	4.2			
17	238	7.2							
18	255	7.1							
19	267	6.3							
20	262	6.2							
21	246	6.4							
22	237	5.6							
23	231	5.2							

	h'F2	T0F2	h'P1	T0P1	h'E	T0E	F2-E	F2-W3000
Time								
00	222	8.4						
01	222	7.7						
02	228	6.2						
03	223	5.1						
04	253	4.4						
05	252	2.8						
06	259	4.9						
07	253	7.9						
08	273	9.6						
09	293	10.4						
10	305	10.1						
11	313	9.6						
12	322	9.4						
13	319	9.6						
14	308	9.9						
15	293	10.2						
16	279	10.3						
17	250	10.0						
18	283	9.6						
19	320	8.8						
20	302	8.6						
21	267	8.9						
22	239	8.9						
23	226	8.7						

Table 57\*

Huancayo, Peru (12,608'; 75°; 75°)

Table 58\*

Huancayo, Peru ( $12^{\circ}0'S$ ,  $75^{\circ}30'W$ ) February 19/2

Time	h <sup>152</sup>	for <sup>2</sup>	h <sup>151</sup>	for <sup>1</sup>	h <sup>150</sup>	for <sup>0</sup>	the	F2-M5000
00	232	8.4	232	7.2	239	5.9	248	4.9
01	232	7.2	239	5.9	258	4.1	263	3.6
02	232	6.9	239	5.6	260	4.9	260.	6.0
03			277	9.8	224	4.2	237	4.6
04			300	10.3	216	4.7	237	3.6
05			319	9.8	209	4.8	237	3.9
06			330	9.4	206	4.9	231	3.9
07			321.	9.3	200	4.9	230	4.0
08			324.	9.4	230	4.6	230	4.0
09			325.	9.6	294	4.6	235	3.8
10			310	10.0	205	4.6	236	3.6
11			254	10.0	207	4.4	236	3.0
12			258	9.9	209	4.4	235	2.6
13			273	9.6	219	4.4	235	1.7
14			310	10.0	205	4.6	235	1.0
15			254	10.0	207	4.4	235	
16			258	9.9	209	4.4	235	
17			273	9.6	219	4.4	235	
18			310	10.0	205	4.6	235	
19			254	10.0	207	4.4	235	
20			258	9.9	209	4.4	235	
21			273	9.6	219	4.4	235	
22			310	10.0	205	4.6	235	
23			254	10.0	207	4.4	235	

Time: 75.00%  
Speed: 16.0 Km to 0.5 Km in fifteen minutes.

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Huancayo, Perù (12°0' S., 75°30' W.)

Time	b1F2	b2F2	h1E1	h2E1	f0E1	f1E1	f2E1	f3E1
00	306	5.6						
01	286	5.0						
02	275	4.3						
03	278	3.9						
04	275	3.2						
05	275	2.8						
06	269	5.2						
07	287	7.6	238	4.3	2.6			
08	316	8.9	226	4.6	3.0			
09	348	9.4	222	4.7	3.3			
10	378	9.4	216	4.6	3.5			
11	383	2.8	215	4.8	3.8			
12	387	2.7	211	4.8	3.8			
13	389	9.0	207	4.8	3.8			
14	380	0.4	203	4.8	3.7			
15	364	9.8	209	4.7	3.4			
16	344	10.0	211	4.5	3.0			
17	283	1.1	216	4.4	2.6			
18	272	16.3	243	4.4	2.8			
19	284	9.9	325	8.4				
20	325	8.4						
21	341	7.8						
22	351	7.2						
23	324	6.6						

Time: 75.0<sup>7</sup><sub>6</sub>  
Sweep: 16.0 Mc to 0.5 Mc in fifteen minutes.

Huancayo, Peru ( $12.0^{\circ}\text{S}$ ,  $75.3^{\circ}\text{W}$ )

Time	h'F2	fot2	h'F1	Fot1	h'W	FW	FW	F2-W3000
00	247	7.2						
01	237	6.0						
02	248	5.0						
03	260	4.4						
04	268	3.9						
05	258	3.6						
06	257	5.0						
07	265	7.6						
08	264	8.8						
09	327	9.4						
10	362	9.3						
11	381	9.0						
12	384	8.8						
13	385	8.8						
14	370	8.9						
15	355	9.0						
16	330	9.4						
17	289	9.6						
18	266	9.6						
19	297	9.3						
20	310	8.5						
21	318	8.0						
22	291	7.5						
23	265	7.5						

Time: 75.0%  
Sweep: 16.0 Mc to 0.5 Mc in fifteen minutes.

1

December 1941

Time: 0<sup>00</sup>  
\*Average values.  
\*\*These date observed 25 minutes past the hour indicated.

Table 61\*

Huancayo, Peru (12.0°S, 75.3°W)							December 1941														
Time	h <sup>1</sup> F2	f <sup>0</sup> F2	h <sup>1</sup> H	f <sup>0</sup> H	h <sup>1</sup> E	f <sup>0</sup> E	h <sup>1</sup> S	f <sup>0</sup> S	h <sup>1</sup> M3000	f <sup>0</sup> M3000	h <sup>1</sup> F2	f <sup>0</sup> F2	h <sup>1</sup> H	f <sup>0</sup> H	h <sup>1</sup> E	f <sup>0</sup> E	h <sup>1</sup> S	f <sup>0</sup> S	h <sup>1</sup> M3000	f <sup>0</sup> M3000	
00	324	5.6									00	4.8								4.6	
01	328	5.1									01	4.8								8.5	
02	323	4.7									02	4.9								8.5	
03	318	4.2									03	4.8								4.5	
04	294	3.6									04	4.7									
05	283	3.6									05	4.8									
06	258	6.5									06	4.6									
07	285	8.6									07	4.3									
08	303	9.8									08	3.9									
09	338	10.1									09	3.6									
10	358	10.2									10	4.2									
11	364	9.9									11	6.2									
12	367	9.9									12	8.3									
13	366	10.1									13	9.4									
14	360	10.5									14	9.9									
15	322	10.8									15	10.0									
16	334	10.9									16	9.8									
17	256	10.9									17	9.7									
18	271	10.8									18	9.3									
19	299	10.5									19	9.3									
20	314	9.4									20	8.9									
21	331	8.3									21	8.4									
22	340	7.6									22	7.2									
23	350	6.6									23	5.5									

Time: 75.0°N.

Sweep: 16.0 Mc to 0.5 Mc in fifteen minutes.  
\*Average values.

Table 62\*

San Juan, Puerto Rico (18.4°N, 66.1°W)							November 1941														
Time	h <sup>1</sup> F2	f <sup>0</sup> F2	h <sup>1</sup> H	f <sup>0</sup> H	h <sup>1</sup> E	f <sup>0</sup> E	h <sup>1</sup> S	f <sup>0</sup> S	h <sup>1</sup> M3000	f <sup>0</sup> M3000	Time	h <sup>1</sup> F2	f <sup>0</sup> F2	h <sup>1</sup> H	f <sup>0</sup> H	h <sup>1</sup> E	f <sup>0</sup> E	h <sup>1</sup> S	f <sup>0</sup> S	h <sup>1</sup> M3000	f <sup>0</sup> M3000
00	4.8										00	4.8									
01	4.8										01	4.8									
02	4.7										02	4.6									
03	4.2										03	4.5									
04	2.9										04	4.6									
05	2.6										05	4.5									
06	2.6										06	4.6									
07	2.6										07	4.1									
08	2.6										08	3.6									
09	2.6										09	3.2									
10	2.6										10	4.1									
11	2.6										11	6.1									
12	2.6										12	7.6									
13	2.6										13	8.4									
14	2.6										14	9.2									
15	2.6										15	9.8									
16	2.6										16	10.2									
17	2.6										17	10.7									
18	2.6										18	11.2									
19	2.6										19	11.1									
20	2.6										20	10.5									
21	2.6										21	9.5									
22	2.6										22	8.2									
23	2.6										23	6.5									

Time: 0.0°.

\*Average values.  
\*\*These data observed 25 minutes past the hour indicated.

Table 63\*

Huancayo, Peru (12.0°S, 75.3°W)							November 1941														
Time	h <sup>1</sup> F2	f <sup>0</sup> F2	h <sup>1</sup> H	f <sup>0</sup> H	h <sup>1</sup> E	f <sup>0</sup> E	h <sup>1</sup> S	f <sup>0</sup> S	h <sup>1</sup> M3000	f <sup>0</sup> M3000	Time	h <sup>1</sup> F2	f <sup>0</sup> F2	h <sup>1</sup> H	f <sup>0</sup> H	h <sup>1</sup> E	f <sup>0</sup> E	h <sup>1</sup> S	f <sup>0</sup> S	h <sup>1</sup> M3000	f <sup>0</sup> M3000
00	6.6										00	5.2									
01	5.8										01	4.6									
02	5.1										02	4.6									
03	4.6										03	4.5									
04	4.1										04	4.6									
05	3.7										05	4.6									
06	6.8										06	4.6									
07	2.81	9.1	239	4.3	2.8						07	4.1									
08	2.02	10.2	231	4.7	3.1						08	3.6									
09	2.20	10.4	224	4.8	3.5						09	3.2									
10	2.40	10.3	219	4.9	3.7						10	4.1									
11	2.47	10.1	218	4.9	3.9						11	6.1									
12	2.47	10.2	214	4.9	3.8						12	7.6									
13	2.52	10.4	210	4.9	3.8						13	8.4									
14	2.54	10.7	213	4.8	3.5						14	9.2									
15	2.52	10.9	222	4.6	3.2						15	9.8									
16	2.55	10.9	231	4.4	2.9						16	10.2									
17	2.63	10.8	237	4.9	3.3						17	10.7									
18	2.77	10.7	214	4.9	3.1						18	11.2									
19	2.98	9.8	239	4.3	2.8						19	11.1									
20	2.33	9.4	240	4.7	3.1						20	10.5									
21	2.47	8.6	224	4.8	3.6						21	10.2									
22	2.56	7.9	231	4.4	2.9						22	9.5									
23	2.43	7.3	234	4.7	3.2						23	8.2									

Time: 75.0°N.

Sweep: 16.0 Mc to 0.5 Mc in fifteen minutes.  
\*Average values.Time: 0.0°.  
\*Average values.  
\*\*These data observed 25 minutes past the hour indicated.

Table 65\*

Huancayo, Peru ( $12.0^{\circ}\text{S}$ ,  $75.3^{\circ}\text{W}$ )

October 1941

Time	$\text{h}^{\text{M}}\text{Z}$	$\text{f}^{\text{M}}\text{P2}$	$\text{h}^{\text{M}}\text{P1}$	$\text{f}^{\text{M}}\text{P1}$	$\text{h}^{\text{E}}$	$\text{f}^{\text{E}}$	$\text{f}^{\text{M}}$	$\text{f}^{\text{M}}\text{M3000}$
00	250	8.0						
01	245	6.8						
02	248	5.9						
03	257	5.2						
04	268	4.7						
05	260	4.3						
06	236	6.7						
07	278	9.0	4.3	2.7				
08	302	10.2	233	4.6	3.2			
09	323	10.7	227	4.8	3.6			
10	347	10.6	221	4.8	3.7			
11	297	9.9	219	4.9	3.8			
12	347	9.4	212	4.8	3.9			
13	357	9.4	210	4.8	3.8			
14	348	9.6	211	4.7	3.6			
15	295	9.9	215	4.6	3.2			
16	396	10.2	229	4.3	2.8			
17	265	10.3						
18	288	10.1						
19	351	9.4						
20	319	8.6						
21	328	8.5						
22	306	8.3						
23	274	8.2						

Time:  $75.0^{\circ}\text{W}$ .  
 Steep:  $16.0^{\circ}$  Mc to  $0.5^{\circ}$  Mc in fifteen minutes.  
 Average values.

\*Average values.  
 \*\*These data observed 25 minutes past the hour indicated.

Table 66\*

San Juan, Puerto Rico ( $18.4^{\circ}\text{N}$ ,  $66.1^{\circ}\text{W}$ )

September 1941

Time	$\text{h}^{\text{M}}\text{Z}$	$\text{f}^{\text{M}}\text{P2}$	$\text{h}^{\text{M}}\text{P1}$	$\text{f}^{\text{M}}\text{P1}$	$\text{h}^{\text{E}}$	$\text{f}^{\text{E}}$	$\text{f}^{\text{M}}$	$\text{f}^{\text{M}}\text{M3000}$
00	250	8.0						
01	245	6.8						
02	248	5.9						
03	257	5.2						
04	268	4.7						
05	260	4.3						
06	236	6.7						
07	278	9.0	4.3	2.7				
08	302	10.2	233	4.6	3.2			
09	323	10.7	227	4.8	3.7			
10	347	10.6	221	4.8	3.8			
11	297	9.9	219	4.9	3.9			
12	347	9.4	212	4.8	3.8			
13	357	9.4	210	4.8	3.8			
14	348	9.6	211	4.7	3.6			
15	295	9.9	215	4.6	3.2			
16	396	10.2	229	4.3	2.8			
17	265	10.3						
18	288	10.1						
19	351	9.4						
20	319	8.6						
21	328	8.5						
22	306	8.3						
23	274	8.2						

Time:  $0.0^{\circ}$ .  
 Steep:  $16.0^{\circ}$  Mc to  $0.5^{\circ}$  Mc in fifteen minutes.  
 Average values.

\*Average values.  
 \*\*These data observed 25 minutes past the hour indicated.

Table 67\*

Huancayo, Peru ( $12.0^{\circ}\text{S}$ ,  $75.3^{\circ}\text{W}$ )

September 1941

Time	$\text{h}^{\text{M}}\text{Z}$	$\text{f}^{\text{M}}\text{P2}$	$\text{h}^{\text{M}}\text{P1}$	$\text{f}^{\text{M}}\text{P1}$	$\text{h}^{\text{E}}$	$\text{f}^{\text{E}}$	$\text{f}^{\text{M}}$	$\text{f}^{\text{M}}\text{M3000}$
00	245	7.4						
01	254	6.6						
02	259	5.9						
03	220	5.4						
04	294	4.8						
05	288	4.3						
06	269	5.5						
07	262	8.1	242	4.2	2.6			
08	305	9.4	233	4.6	3.0			
09	330	9.7	225	4.8	3.4			
10	353	9.3	220	4.9	3.7			
11	369	9.1	216	4.9	3.8			
12	383	9.0	211	4.9	3.8			
13	376	8.9	212	4.9	3.7			
14	361	9.0	213	4.8	3.5			
15	347	9.0	213	4.7	3.3			
16	312	8.9	220	4.7	2.8			
17	265	9.0						
18	290	8.9						
19	348	8.0						
20	332	7.7						
21	284	7.9						
22	252	8.0						
23	235	7.9						

Time:  $75.0^{\circ}\text{W}$ .  
 Steep:  $16.0^{\circ}$  Mc to  $0.5^{\circ}$  Mc in fifteen minutes.  
 Average values.

\*Average values.  
 \*\*These data observed 20 minutes past the hour indicated.

Table 68\*

San Juan, Puerto Rico ( $18.4^{\circ}\text{N}$ ,  $66.1^{\circ}\text{W}$ )

August 1941

Time	$\text{h}^{\text{M}}\text{Z}$	$\text{f}^{\text{M}}\text{P2}$	$\text{h}^{\text{M}}\text{P1}$	$\text{f}^{\text{M}}\text{P1}$	$\text{h}^{\text{E}}$	$\text{f}^{\text{E}}$	$\text{f}^{\text{M}}$	$\text{f}^{\text{M}}\text{M3000}$
00	245	7.4						
01	254	6.6						
02	259	5.9						
03	220	5.4						
04	294	4.8						
05	288	4.3						
06	269	5.5						
07	262	8.1	242	4.2	2.6			
08	305	9.4	233	4.6	3.0			
09	330	9.7	225	4.8	3.4			
10	353	9.3	220	4.9	3.7			
11	369	9.1	216	4.9	3.8			
12	383	9.0	211	4.9	3.8			
13	376	8.9	212	4.9	3.7			
14	361	9.0	213	4.8	3.5			
15	347	9.0	213	4.7	3.3			
16	312	8.9	220	4.7	2.8			
17	265	9.0						
18	290	8.9						
19	348	8.0						
20	332	7.7						
21	284	7.9						
22	252	8.0						
23	235	7.9						

Time:  $0.0^{\circ}$ .  
 Steep:  $16.0^{\circ}$  Mc to  $0.5^{\circ}$  Mc in fifteen minutes.  
 Average values.

\*Average values.  
 \*\*These data observed 20 minutes past the hour indicated.

Table 69\*

Huancayo, Peru (12.0°S, 75.3°W)

August 1941

San Juan, Puerto Rico (18.4°N, 66.1°W)

July 1941

Time	hV2	F0F2	hV1	F0F1	h'2	F0F1'	h'1	F0F1	h'2-M3000
00	228	6.8							
01	233	6.2							
02	236	5.8							
03	247	5.0							
04	261	4.4							
05	274	4.0							
06	278	4.1							
07	247	6.7							
08	303	8.0	233	4.6	2.8				
09	330	8.5	225	4.8	3.3				
10	356	8.4	220	4.8	3.6				
11	386	8.1	214	4.9	3.8				
12	390	8.0	210	4.9	3.8				
13	394	7.9	208	4.9	3.7				
14	387	8.0	211	4.8	3.6				
15	358	8.2	214	4.7	3.2				
16	326	8.1	222	4.5	2.8				
17	256	8.2							
18	282	8.4							
19	318	7.7							
20	303	7.3							
21	266	7.3							
22	236	7.5							
23	229	7.3							

Time: 75.0°W.  
Sweep: 16.0 Mc to 0.5 Mc in fifteen minutes.  
\*Average values.Time: 0.0°.  
\*Average values.  
\*\*These data observed 20 minutes past the hour indicated.

Table 70\*

San Juan, Puerto Rico (18.4°N, 66.1°W)

July 1941

Time	hV2	F0F2	hV1	F0F1	h'2	F0F1'	h'1	F0F1	h'2-M3000
00	00	7.2							
01	01	6.8							
02	02	6.5							
03	03	6.3							
04	04	6.3							
05	05	6.1							
06	06	5.7							
07	07	5.2							
08	08	4.9							
09	09	4.7							
10	10	4.8							
11	11	5.4							
12	12	6.0							
13	13	6.5							
14	14	6.5							
15	15	6.7							
16	16	8.3							
17	17	8.7							
18	18	8.6							
19	19	8.8							
20	20	8.8							
21	21	8.7							
22	22	8.3							
23	23	7.7							

Time: 0.0°.  
\*Average values.  
\*\*These data observed 20 minutes past the hour indicated.

Table 71\*

Huancayo, Peru (12.0°S, 75.3°W)

July 1941

San Juan, Puerto Rico (18.4°N, 66.1°W)

June 1941

Time	hV2	F0F2	hV1	F0F1	h'2	F0F1'	h'1	F0F1	h'2-M3000
00	252	5.2							
01	258	5.1							
02	260	4.8							
03	254	4.3							
04	262	3.3							
05	273	3.0							
06	275	3.4							
07	246	5.8							
08	312	7.1	228	4.5	2.7				
09	353	7.5	218	4.6	3.1				
10	377	7.2	214	4.7	3.4				
11	415	7.1	211	4.7	3.6				
12	415	7.1	209	4.7	3.7				
13	420	7.2	207	4.7	3.6				
14	417	7.2	207	4.7	3.5				
15	386	7.2	211	4.6	3.1				
16	350	7.3	224	4.4	2.6				
17	256	7.4							
18	274	7.4							
19	287	7.0							
20	274	6.8							
21	255	6.8							
22	252	6.0							
23	251	5.5							

Time: 75.0°W.  
Sweep: 16.0 Mc to 0.5 Mc in fifteen minutes.  
\*Average values.Time: 0.0°.  
\*Average values.

\*\*

Time: 0.0°.  
\*Average values.

\*\*

Time: 0.0°.  
\*Average values.

\*\*

Table 73

Table 7A

Huancayo, Peru (12.0°S, 75.3°W)

Time: 75.0%  
Sweep: 16.0 Mc to 0.5 Mc in fifteen minutes.

• 300 pages • 16.0 mm

#### Average values.

San Juan, Puerto Rico (18.4°N, 66.1°W)

May 1961

Time: 0.00s.

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May 19/1

Time: 75.0%  
Sweep: 16.0 Mc to 0.5 Mc in fifteen minutes.  
~~Amplifier values~~

San Juan, Puerto Rico ( $18.4^{\circ}\text{N}$ ,  $66.1^{\circ}\text{W}$ ) April 1941

Time	$\text{h}^{\circ}\text{F2}$	$\text{f}^{\circ}\text{F2}$	$\text{h}^{\circ}\text{F1}$	$\text{f}^{\circ}\text{F1}$	$\text{h}^{\circ}\text{E}$	$\text{f}^{\circ}\text{E}$	$\text{f}^{\circ}\text{S}$	$\text{f}^{\circ}\text{E-S}$	$\text{f}^{\circ}\text{F2-M3000}$
00	6.3								
01	5.9								
02	5.8								
03	5.8								
04	5.8								
05	5.4								
06	5.2								
07	4.5								
08	4.1								
09	4.0								
10	4.9								
11	6.1								
12	6.7	2.4	3.8						
13	7.3	4.2	3.9						
14	8.1	4.5	4.3						
15	9.4	4.9	4.3						
16	10.5	4.9	4.4						
17	10.8	4.9	4.3						
18	10.3	4.8	4.2						
19	10.4	4.6	4.1						
20	9.9	4.2	3.9						
21	9.4								
22	9.1								
23	7.4								

Time:  $0.0^{\circ}$   
\*Average values.

Table 76\*

Table 77\*

Huancayo, Peru ( $12.0^{\circ}\text{S}$ ,  $75.3^{\circ}\text{W}$ ) April 1941

April 1941

Time	$\text{h}^{\circ}\text{F2}$	$\text{f}^{\circ}\text{F2}$	$\text{h}^{\circ}\text{F1}$	$\text{f}^{\circ}\text{F1}$	$\text{h}^{\circ}\text{E}$	$\text{f}^{\circ}\text{E}$	$\text{f}^{\circ}\text{S}$	$\text{f}^{\circ}\text{E-S}$	$\text{f}^{\circ}\text{F2-M3000}$
00	6.3								
01	5.9								
02	5.8								
03	5.8								
04	5.8								
05	5.4								
06	5.2								
07	4.5								
08	4.1								
09	4.0								
10	4.9								
11	6.1								
12	6.7	2.4	3.8						
13	7.3	4.2	3.9						
14	8.1	4.5	4.3						
15	9.4	4.9	4.3						
16	10.5	4.9	4.4						
17	10.8	4.9	4.3						
18	10.3	4.8	4.2						
19	10.4	4.6	4.1						
20	9.9	4.2	3.9						
21	9.4								
22	9.1								
23	7.4								

Time:  $75.0^{\circ}\text{W}$ .  
Sweep: 16.0 Mc to 0.5 Mc in fifteen minutes.  
\*Average values.

**TABLE 78**  
**IONOSPHERIC DATA**

**hF2      km      November, 1946**  
 (Characteristic)      (Unit)      (Month)

Observed at **Washington, D. C.**

**Lat 39.0° N, Long 77.5° W**

**75° W      Mean Time**

		National Bureau Of Standards (Institution) J. L. S.																						
		Scaled by: M. S. L., A. M. K., B. W. D.																						
Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23

1	280	250	240	260	250	260	(250)	240	230	230	230	250	250	[260]c	240	230	220	220	240	220	230	250	240	230	
2	250	250	320	(320)	320	270	250	230	220	230	220	230	240	250	240	230	230	220	210	220	210	250	260	270	
3	270	250	250	250	260	240	230	230	220	230	220	230	250	260	240	240	230	220	220	230	230	250	260	250	
4	250	270	270	260	260	250	230	230	220	230	220	230	250	240	240	220	220	220	230	240	220	230	240	(250)	240
5	250	270	300	290	290	260	240	230	230	230	220	250	[240]c	230	[240]c	240	220	220	230	230	220	220	240	270	260
6	270	260	240	280	290	270	260	230	220	(260)	270	250	230	220	230	230	220	220	240	230	230	230	250	240	
7	260	250	260	250	250	240	250	230	230	230	220	220	240	220	230	230	220	210	210	230	230	230	240	250	
8	240	260	250	260	260	260	240	220	220	220	220	240	220	220	250	230	230	220	[230]a	250	230	230	270	260	
9	240	240	270	260	260	250	250	280	240	230	220	220	240	220	220	220	220	230	220	220	230	220	250	270	
10	280	260	240	240	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C		
11	C	290	250	250	330	300	250	330	300	240	(220)	220	240	250	220	230	230	220	220	240	240	230	240	[280]a	
12	320	360	330	260	260	230	280	280	250	250	230	220	230	240	250	220	230	230	220	220	240	240	250	260	
13	250	240	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	
14	230	250	270	270	270	250	260	260	260	260	260	260	260	260	260	260	260	260	260	260	260	260	260	260	
15	260	270	270	250	260	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	260	
16	270	210	270	280	280	290	300	290	290	260	260	250	250	260	240	240	230	230	[230]c	210	230	240	250	260	
17	300	290	280	250	250	(250)	(270)	230	230	230	250	250	250	260	220	220	220	230	230	[230]c	230	250	230	250	
18	250	260	270	270	270	260	250	250	250	250	250	250	250	250	240	240	240	240	240	240	240	240	240	250	
19	260	250	270	280	280	260	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C		
20	260	(290)	300	270	270	250	(250)	230	230	230	220	230	230	230	250	250	230	230	230	230	230	230	230	240	
21	300	300	280	280	260	240	(260)	230	230	230	240	[210]c	220	[210]c	240	240	230	230	240	220	220	230	230	250	
22	270	280	(290)	(270)	[230]c	[230]c	(290)	250	250	220	220	220	230	230	230	230	230	230	230	230	230	230	230	250	
23	(250)	270	290	280	260	240	260	250	230	220	220	220	230	230	230	230	230	230	[220]c	220	220	240	250	240	
24	270	(300)	(360)	300	270	270	250	250	230	230	220	220	220	220	230	230	230	230	[230]c	230	220	220	240	260	
25	260	260	260	240	(230)c	240	250	250	230	230	220	220	220	230	230	230	230	230	220	220	220	220	250	260	
26	270	280	280	260	260	260	260	260	250	250	250	250	250	250	[230]c	[230]c	[230]c	230	220	220	220	220	220	240	
27	260	260	270	270	250	240	(230)	(250)	230	220	210	230	220	220	220	220	220	210	210	220	220	220	240	260	
28	(270)	270	260	240	(250)	(240)	(280)	240	230	230	230	230	230	230	230	230	230	220	(220)	230	220	230	(250)	260	
29	(270)	270	(280)	270	270	240	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	(240)	250	
30	280	(280)	270	250	250	230	(250)	230	220	220	230	230	230	230	230	230	230	230	230	[230]c	[210]c	[210]c	[230]c	[270]c	
31																									
Median	260	265	270	260	250	250	260	240	230	230	230	230	230	230	230	230	230	220	220	220	220	230	250	250	
Count	29	30	30	29	29	28	28	28	28	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	

Sweep 0.75 Mc 1.5 Me In 3.4 min  
Manual  Automatic

TABLE 79  
Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.  
IONOSPHERIC DATA

Form adopted June 1946

		National Bureau Of Standards																						
		(Institution) J.L.S.																						
		Scaled by: M.S.L. A.M.K. B.W.D.																						
Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	6.2	(6.0) <sup>a</sup>	5.5	(5.0)	4.8	3.2	2.5	1.6	0.9	0.5	0.3	0.2	0.1	(2.3)	(1.8)	(1.3)	(1.0)	C	C	(1.0)	(1.0)	(1.0)	(1.0)	4.8
2	(4.4)	(4.0)	2.1	F(2.7)	2.9	2.3	2.6	(3.0) <sup>b</sup>	7.2	9.4	10.2	11.0	D	D	D	D	C	C	(1.4)	(1.4)	(1.4)	(1.4)	4.8	
3	(5.5)	5.1	5.0	(4.0)	(3.7)	3.5	4.2	6.1	7.2	8.0	C	C	C	C	C	C	C	C	(8.4)	6.5	5.3	5.3	5.3	
4	4.7	4.3	4.2	4.0	4.0	4.1	3.6	6.7	9.0	(1.0)	C	C	D	D	D	D	C	C	6.4	5.2	5.1	5.1	5.1	
5	5.1	4.3	4.3	4.3	4.4	5.0	(4.1)	4.2	(2.0)	10.0	C	C	(1.5)	(1.4)	(1.4)	(1.4)	C	C	(8.0)	(3.3)	6.6	6.6	6.6	
6	(5.0)	(5.1)	(5.1)	(5.1)	(5.1)	5.1	5.2	5.0	5.0	4.8	C	C	(1.0)	(1.5)	(1.5)	(1.5)	D	D	D	D	C	C	C	
7	5.0	4.8	4.8	4.4	4.0	3.6	3.5	7.0	(9.6)	D	D	D	C	C	C	C	C	C	C	C	C	C	C	
8	4.6	(4.0)	3.8	(3.4)	3.3	3.8	3.8	3.5	7.2	10.4	10.9	11.3	11.9	12.0	12.6	13.6	C	C	(9.6)	6.7	6.6	6.5	6.5	
9	(4.1)	5.6	5.1	5.0	4.7	3.9	4.3	7.2	(2.0)	11.3	11.0	11.0	12.5	13.1	13.1	13.1	C	C	12.6	11.7	11.7	11.7	11.7	
10	(6.2)	(6.0)	(6.0)	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
11	C	5.3	5.2	5.2	3.2	3.2	3.2	3.2	3.2	3.2	(6.6)	(6.9)	(0.4)	D	D	D	D	D	D	D	D	D	D	D
12	(5.2)	(5.0)	(5.0)	5.0	5.0	4.7	4.6	7.3	(7.3)	(0.3)	(11.5)	D	D	D	D	D	D	D	D	D	D	D	D	
13	(5.4)	5.2	4.9	4.6	4.3	3.8	3.8	3.7	6.7	10.2	(11.3)	(11.3)	(11.3)	D	D	D	D	(11.5)	(11.5)	(11.5)	(11.5)	(11.5)	(11.5)	
14	(4.8)	4.5	4.4	4.3	4.0	3.6	(3.6)	6.8	9.2	11.0	11.7	(11.9)	(11.9)	(11.9)	(11.9)	(11.9)	(11.9)	(11.9)	(11.9)	(11.9)	(11.9)	(11.9)	(11.9)	
15	4.8	(4.4)	4.3	4.2	3.6	(3.3)	3.2	6.2	(10.2)	(11.3)	(11.3)	(11.3)	(11.3)	(11.3)	(11.3)	(11.3)	(11.3)	(11.3)	(11.3)	(11.3)	(11.3)	(11.3)	(11.3)	
16	(7.3)	(6.9)	(6.4)	(6.0)	(6.0)	(6.0)	(6.0)	(6.0)	(6.0)	(6.0)	(6.0)	(6.0)	(6.0)	(6.0)	(6.0)	(6.0)	(6.0)	(6.0)	(6.0)	(6.0)	(6.0)	(6.0)	(6.0)	
17	(4.0)	(4.1)	(4.1)	(4.1)	(4.1)	4.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
18	(4.9)	(4.0)	(4.0)	(4.0)	(4.0)	(4.0)	(4.0)	(4.0)	(4.0)	(4.0)	(4.0)	(4.0)	(4.0)	(4.0)	(4.0)	(4.0)	(4.0)	(4.0)	(4.0)	(4.0)	(4.0)	(4.0)	(4.0)	(4.0)
19	(5.3)	(5.6)	5.3	5.2	4.9	4.9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
20	(4.1)	3.9	4.5	4.8	4.8	4.6	3.7	(6.3)	(9.3)	(10.3)	(11.3)	(11.3)	D	D	D	D	C	C	C	C	C	C	C	C
21	(5.3)	(5.4)	(5.4)	(5.6)	(5.6)	5.4	4.8	5.1	(5.3)	8.0	(10.9)	(10.9)	(10.9)	D	D	D	D	C	C	C	C	C	C	C
22	(5.0)	4.7	3.5	3.1	3.1	3.1	3.1	3.1	(2.1)	(3.8)	6.6	(11.3)	(11.3)	(11.3)	(11.3)	(11.3)	(11.3)	C	C	(13.5)	C	C	C	
23	5.0	4.7	4.3	4.3	4.4	3.9	3.9	3.9	3.9	3.9	C	C	C	C	C	C	C	C	C	C	C	C	C	
24	(3.6)	3.5	3.3	3.1	3.1	3.1	3.1	3.1	3.1	3.1	5.0	(7.2)	8.9	11.2	(11.5)	C	C	C	C	C	C	C	C	
25	5.3	5.0	5.1	5.3	4.5	3.9	3.8	5.9	(9.3)	(11.0)	C	C	C	C	C	C	C	C	C	C	C	C	C	
26	5.0	5.0	5.2	5.2	4.3	4.3	4.3	5.9	(9.3)	(11.2)	(11.2)	12.4	12.2	12.4	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	
27	(4.5)	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	
28	4.3	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	
29	(3.9)	(3.9)	(4.1)	(4.1)	(4.1)	4.5	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	
30	(3.9)	(4.0)	4.3	4.1	4.5	4.0	3.8	(5.2)	(8.5)	10.2	(11.0)	(11.0)	(11.0)	(11.0)	(11.0)	(11.0)	(11.0)	(11.0)	(11.0)	(11.0)	(11.0)	(11.0)		
31																								
Median	(5.0)	4.7	4.4	4.4	4.2	3.8	3.7	6.5	(9.3)	(10.7)	11.4	(11.5)	(12.3)	(12.0)	(12.5)	(12.5)	(12.5)	(12.5)	(12.5)	(12.5)	(12.5)	(12.5)		
Count	49	30	30	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	

D INDICATES VALUES GREATER THAN 11.5 Mc, THE UPPER LIMIT OF THE AUTOMATIC RECORDER, VALUES IN EXCESS OF 11.5 Mc, OBTAINED BY MANUAL OPERATION OF AUXILIARY RECORDER

Sweep Mc to Mc in min  
Manual □ Automatic □

U. S. GOVERNMENT PRINTING OFFICE: 1946 O - 10518

TABLE 80  
Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.  
IONOSPHERIC DATA

Form adopted June 1946  
National Bureau Of Standards  
(Institution) J. L. S.

(Characteristic)	f <sup>o</sup> F2	Mc	November, 1946	(Month)	Washington, D. C.	(Unit)	Lat. 39.0° N Long 77.5° W		75° W Mean Time										Calculated by: A. M. K. B. W. D.													
							Day	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130	1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	
1	[6.2] <sup>c</sup>	[5.7] <sup>c</sup>	[5.2] <sup>c</sup>	4.9	(4.7)	(2.3)	5	[2.5] <sup>c</sup>	[2.3] <sup>c</sup>	[2.1] <sup>c</sup>	[1.9] <sup>c</sup>	[1.7] <sup>c</sup>	[1.5] <sup>c</sup>	[1.3] <sup>c</sup>	[1.1] <sup>c</sup>	[0.9] <sup>c</sup>	[0.7] <sup>c</sup>	[0.5] <sup>c</sup>	[0.3] <sup>c</sup>	[0.1] <sup>c</sup>	[0.1] <sup>c</sup>	[0.1] <sup>c</sup>	[0.1] <sup>c</sup>	[0.1] <sup>c</sup>	[0.1] <sup>c</sup>	[0.1] <sup>c</sup>	[0.1] <sup>c</sup>	[0.1] <sup>c</sup>	[0.1] <sup>c</sup>	[0.1] <sup>c</sup>		
2	[4.0] <sup>c</sup>	[3.7] <sup>c</sup>	[2.3]	4.7	(4.7)	(2.3)	4.9	[4.3] <sup>c</sup>	[3.4] <sup>c</sup>	[2.3]	[1.4] <sup>c</sup>	[1.0] <sup>c</sup>	[0.9] <sup>c</sup>	[0.8] <sup>c</sup>	[0.7] <sup>c</sup>	[0.6] <sup>c</sup>	[0.5] <sup>c</sup>	[0.4] <sup>c</sup>	[0.3] <sup>c</sup>	[0.2] <sup>c</sup>	[0.1] <sup>c</sup>											
3	[5.3] <sup>c</sup>	[5.1] <sup>c</sup>	[4.5] <sup>c</sup>	3.8	3.6	3.6	5.3	[7.4] <sup>c</sup>	C	C	C	C	C	C	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D		
4	[4.6] <sup>c</sup>	[4.3] <sup>c</sup>	[4.0] <sup>c</sup>	4.0	4.1	4.0	5.0	[8.0] <sup>c</sup>	10	1	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C		
5	[4.5] <sup>c</sup>	[4.3] <sup>c</sup>	[4.3] <sup>c</sup>	4.6	4.4	3.9	5.1	[8.5] <sup>c</sup>	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C		
6	[5.7] <sup>c</sup>	[5.3] <sup>c</sup>	[5.3] <sup>c</sup>	5.1	5.0	5.0	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C			
7	4.9	[4.8] <sup>c</sup>	[4.7] <sup>c</sup>	(4.2) <sup>d</sup>	3.7	(3.5)	5.0	[8.5] <sup>c</sup>	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D			
8	(4.1) <sup>d</sup>	[3.9] <sup>c</sup>	[3.6] <sup>c</sup>	(3.4)	3.3	3.8	5.1	[9.0] <sup>c</sup>	(11.0)	(11.4)	[11.6] <sup>c</sup>	[12.0] <sup>c</sup>	[12.2] <sup>c</sup>	[12.4] <sup>c</sup>	[12.6] <sup>c</sup>	[12.8] <sup>c</sup>	[13.0] <sup>c</sup>	[13.2] <sup>c</sup>	[13.4] <sup>c</sup>	[13.6] <sup>c</sup>	[13.8] <sup>c</sup>	[13.9] <sup>c</sup>	[14.0] <sup>c</sup>	[14.1] <sup>c</sup>	[14.2] <sup>c</sup>	[14.3] <sup>c</sup>	[14.4] <sup>c</sup>	[14.5] <sup>c</sup>	[14.6] <sup>c</sup>	[14.7] <sup>c</sup>		
9	5.7	[5.3] <sup>c</sup>	[5.0] <sup>c</sup>	4.9	4.2	3.8	5.1	[8.9] <sup>c</sup>	[10.8] <sup>c</sup>	[11.7] <sup>c</sup>	[12.3] <sup>c</sup>	[12.7] <sup>c</sup>	[12.9] <sup>c</sup>	[13.1] <sup>c</sup>	[13.3] <sup>c</sup>	[13.5] <sup>c</sup>	[13.7] <sup>c</sup>	[13.9] <sup>c</sup>	[14.1] <sup>c</sup>	[14.3] <sup>c</sup>	[14.5] <sup>c</sup>	[14.7] <sup>c</sup>	[14.9] <sup>c</sup>	[15.1] <sup>c</sup>	[15.3] <sup>c</sup>	[15.5] <sup>c</sup>	[15.7] <sup>c</sup>	[15.9] <sup>c</sup>	[16.0] <sup>c</sup>			
10	(6.0) <sup>c</sup>	[6.0] <sup>c</sup>	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C			
11	C	(5.5) <sup>c</sup>	(5.5) <sup>c</sup>	[4.7] <sup>c</sup>	3.2	3.2	4.6	[8.0] <sup>c</sup>	[10.2] <sup>c</sup>	C	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D		
12	5.0	[5.3] <sup>c</sup>	[5.3] <sup>c</sup>	5.2	4.8	4.5	5.3	[7.9] <sup>c</sup>	(11.5)	[11.5] <sup>c</sup>	C	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D		
13	[5.3] <sup>c</sup>	[5.1] <sup>c</sup>	[4.8] <sup>c</sup>	4.5	3.9	3.7	5.0	[8.5] <sup>c</sup>	(11.0)	[11.3] <sup>c</sup>	[11.5] <sup>c</sup>	C	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D			
14	[4.7] <sup>c</sup>	[4.5] <sup>c</sup>	[4.3] <sup>c</sup>	4.3	3.8	3.6	4.7	[8.0] <sup>c</sup>	10	[7.7] <sup>c</sup>	[11.4] <sup>c</sup>	[11.6] <sup>c</sup>	[11.8] <sup>c</sup>	[12.0] <sup>c</sup>	[12.2] <sup>c</sup>	[12.4] <sup>c</sup>	[12.6] <sup>c</sup>	[12.8] <sup>c</sup>	[13.0] <sup>c</sup>	[13.2] <sup>c</sup>	[13.4] <sup>c</sup>	[13.6] <sup>c</sup>	[13.8] <sup>c</sup>	[14.0] <sup>c</sup>	[14.2] <sup>c</sup>	[14.4] <sup>c</sup>	[14.6] <sup>c</sup>	[14.8] <sup>c</sup>	[15.0] <sup>c</sup>			
15	[4.4] <sup>c</sup>	[4.4] <sup>c</sup>	[4.3] <sup>c</sup>	[3.9] <sup>c</sup>	3.0	4.4	4.0	[8.5] <sup>c</sup>	[10.4] <sup>c</sup>	[10.6] <sup>c</sup>	[11.4] <sup>c</sup>	[11.5] <sup>c</sup>	[11.6] <sup>c</sup>	[11.7] <sup>c</sup>	[11.8] <sup>c</sup>	[11.9] <sup>c</sup>	[12.0] <sup>c</sup>	[12.1] <sup>c</sup>	[12.2] <sup>c</sup>	[12.3] <sup>c</sup>	[12.4] <sup>c</sup>	[12.5] <sup>c</sup>	[12.6] <sup>c</sup>	[12.7] <sup>c</sup>	[12.8] <sup>c</sup>	[12.9] <sup>c</sup>	[13.0] <sup>c</sup>	[13.1] <sup>c</sup>				
16	[7.1] <sup>c</sup>	[6.7] <sup>c</sup>	[6.3] <sup>c</sup>	[5.7] <sup>c</sup>	[5.7] <sup>c</sup>	[5.7] <sup>c</sup>	[5.8] <sup>c</sup>	[7.8] <sup>c</sup>	[8.0] <sup>c</sup>	[8.2] <sup>c</sup>	[8.4] <sup>c</sup>	[8.6] <sup>c</sup>	[8.8] <sup>c</sup>	[9.0] <sup>c</sup>	[9.2] <sup>c</sup>	[9.4] <sup>c</sup>	[9.6] <sup>c</sup>	[9.8] <sup>c</sup>	[10.0] <sup>c</sup>	[10.2] <sup>c</sup>	[10.4] <sup>c</sup>	[10.6] <sup>c</sup>	[10.8] <sup>c</sup>	[11.0] <sup>c</sup>	[11.2] <sup>c</sup>	[11.4] <sup>c</sup>	[11.6] <sup>c</sup>	[11.8] <sup>c</sup>	[12.0] <sup>c</sup>			
17	[4.9] <sup>c</sup>	[4.2] <sup>c</sup>	[4.3] <sup>c</sup>	[4.3] <sup>c</sup>	[4.3] <sup>c</sup>	[4.3] <sup>c</sup>	[4.3] <sup>c</sup>	[4.3] <sup>c</sup>	[4.3] <sup>c</sup>	[4.3] <sup>c</sup>	[4.3] <sup>c</sup>	[4.3] <sup>c</sup>	[4.3] <sup>c</sup>	[4.3] <sup>c</sup>	[4.3] <sup>c</sup>	[4.3] <sup>c</sup>	[4.3] <sup>c</sup>	[4.3] <sup>c</sup>	[4.3] <sup>c</sup>	[4.3] <sup>c</sup>	[4.3] <sup>c</sup>	[4.3] <sup>c</sup>	[4.3] <sup>c</sup>	[4.3] <sup>c</sup>								
18	[4.2] <sup>c</sup>	[4.1] <sup>c</sup>	[4.2] <sup>c</sup>	[4.2] <sup>c</sup>	[4.2] <sup>c</sup>	[4.2] <sup>c</sup>	[4.2] <sup>c</sup>	[4.2] <sup>c</sup>	[4.2] <sup>c</sup>	[4.2] <sup>c</sup>	[4.2] <sup>c</sup>	[4.2] <sup>c</sup>	[4.2] <sup>c</sup>	[4.2] <sup>c</sup>	[4.2] <sup>c</sup>	[4.2] <sup>c</sup>	[4.2] <sup>c</sup>	[4.2] <sup>c</sup>	[4.2] <sup>c</sup>	[4.2] <sup>c</sup>	[4.2] <sup>c</sup>	[4.2] <sup>c</sup>	[4.2] <sup>c</sup>	[4.2] <sup>c</sup>								
19	[5.7] <sup>c</sup>	[5.3] <sup>c</sup>	[5.3] <sup>c</sup>	[5.3] <sup>c</sup>	[5.3] <sup>c</sup>	[5.3] <sup>c</sup>	[5.3] <sup>c</sup>	[5.3] <sup>c</sup>	[5.3] <sup>c</sup>	[5.3] <sup>c</sup>	[5.3] <sup>c</sup>	[5.3] <sup>c</sup>	[5.3] <sup>c</sup>	[5.3] <sup>c</sup>	[5.3] <sup>c</sup>	[5.3] <sup>c</sup>	[5.3] <sup>c</sup>	[5.3] <sup>c</sup>	[5.3] <sup>c</sup>	[5.3] <sup>c</sup>	[5.3] <sup>c</sup>	[5.3] <sup>c</sup>	[5.3] <sup>c</sup>									
20	[4.9] <sup>c</sup>	[4.2] <sup>c</sup>	[4.2] <sup>c</sup>	[4.2] <sup>c</sup>	[4.2] <sup>c</sup>	[4.2] <sup>c</sup>	[4.2] <sup>c</sup>	[4.2] <sup>c</sup>	[4.2] <sup>c</sup>	[4.2] <sup>c</sup>	[4.2] <sup>c</sup>	[4.2] <sup>c</sup>	[4.2] <sup>c</sup>	[4.2] <sup>c</sup>	[4.2] <sup>c</sup>	[4.2] <sup>c</sup>	[4.2] <sup>c</sup>	[4.2] <sup>c</sup>	[4.2] <sup>c</sup>	[4.2] <sup>c</sup>	[4.2] <sup>c</sup>	[4.2] <sup>c</sup>	[4.2] <sup>c</sup>									
21	[5.5] <sup>c</sup>	[5.5] <sup>c</sup>	[5.6] <sup>c</sup>	[5.6] <sup>c</sup>	5.3	4.1	4.5	[6.5] <sup>c</sup>	[7.5] <sup>c</sup>	[7.5] <sup>c</sup>	[7.5] <sup>c</sup>	[7.5] <sup>c</sup>	[7.5] <sup>c</sup>	[7.5] <sup>c</sup>	[7.5] <sup>c</sup>	[7.5] <sup>c</sup>	[7.5] <sup>c</sup>	[7.5] <sup>c</sup>	[7.5] <sup>c</sup>	[7.5] <sup>c</sup>	[7.5] <sup>c</sup>	[7.5] <sup>c</sup>	[7.5] <sup>c</sup>	[7.5] <sup>c</sup>	[7.5] <sup>c</sup>	[7.5] <sup>c</sup>	[7.5] <sup>c</sup>	[7.5] <sup>c</sup>	[7.5] <sup>c</sup>			
22	[5.0] <sup>c</sup>	[4.9] <sup>c</sup>	[3.3] <sup>c</sup>	3.1	1	3.0	(4.5)	[7.5] <sup>c</sup>	[10.0] <sup>c</sup>	[11.2] <sup>c</sup>	[11.3] <sup>c</sup>	[11.4] <sup>c</sup>	[11.5] <sup>c</sup>	[11.6] <sup>c</sup>	[11.7] <sup>c</sup>	[11.8] <sup>c</sup>	[11.9] <sup>c</sup>	[12.0] <sup>c</sup>	[12.1] <sup>c</sup>	[12.2] <sup>c</sup>	[12.3] <sup>c</sup>	[12.4] <sup>c</sup>	[12.5] <sup>c</sup>	[12.6] <sup>c</sup>	[12.7] <sup>c</sup>	[12.8] <sup>c</sup>	[12.9] <sup>c</sup>	[13.0] <sup>c</sup>				
23	[4.8] <sup>c</sup>	[4.5] <sup>c</sup>	[4.3] <sup>c</sup>	4.3	4.1	3.6	3.4	[8.0] <sup>c</sup>	[10.0] <sup>c</sup>	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C		
24	[3.6] <sup>c</sup>	[3.4] <sup>c</sup>	(3.2)	3.0	3.0	4.0	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C		
25	[5.2] <sup>c</sup>	[5.0] <sup>c</sup>	5.2	5.0	4.2	3.9	(4.5)	[7.5] <sup>c</sup>	[10.2] <sup>c</sup>	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C		
26	[5.9] <sup>c</sup>	[5.1] <sup>c</sup>	[5.4] <sup>c</sup>	(5.3)	4.7	[4.3] <sup>c</sup>	[5.2] <sup>c</sup>	[7.5] <sup>c</sup>	[10.0] <sup>c</sup>	[12.3] <sup>c</sup>	[12.3] <sup>c</sup>	[12.3] <sup>c</sup>	[12.3] <sup>c</sup>	[12.3] <sup>c</sup>	[12.3] <sup>c</sup>	[12.3] <sup>c</sup>	[12.3] <sup>c</sup>	[12.3] <sup>c</sup>	[12.3] <sup>c</sup>													
27	[4.4] <sup>c</sup>	[4.3] <sup>c</sup>	[4.2] <sup>c</sup>	3.8	[3.4] <sup>c</sup>	[3.7] <sup>c</sup>	[3.7] <sup>c</sup>	[7.0] <sup>c</sup>	[10.0] <sup>c</sup>	[10.5] <sup>c</sup>	[11.5] <sup>c</sup>	[11.5] <sup>c</sup>	[11.5] <sup>c</sup>	[11.5] <sup>c</sup>	[11.5] <sup>c</sup>	[11.5] <sup>c</sup>	[11.5] <sup>c</sup>	[11.5] <sup>c</sup>	[11.5] <sup>c</sup>	[11.5] <sup>c</sup>												
28	[4.4] <sup>c</sup>	[4.4] <sup>c</sup>	4.6	(4.1) <sup>c</sup>	(3.9)	(3.7)	[4.4] <sup>c</sup>	[6.6] <sup>c</sup>	[9.0] <sup>c</sup>	[10.5] <sup>c</sup>	[11.2] <sup>c</sup>	[11.5] <sup>c</sup>	[11.5] <sup>c</sup>	[11.5] <sup>c</sup>	[11.5] <sup>c</sup>	[11.5] <sup>c</sup>	[11.5] <sup>c</sup>	[11.5] <sup>c</sup>	[11.5] <sup>c</sup>	[11.5] <sup>c</sup>	[11.5] <sup>c</sup>											
29	[3.9] <sup>c</sup>	[4.3] <sup>c</sup>	4.6	4.4	(3.7)	[4.4] <sup>c</sup>	[6.6] <sup>c</sup>	[9.0] <sup>c</sup>	[10.0] <sup>c</sup>	[10.8] <sup>c</sup>	[11.2] <sup>c</sup>	[11.5] <sup>c</sup>	[11.5] <sup>c</sup>	[11.5] <sup>c</sup>	[11.5] <sup>c</sup>	[11.5] <sup>c</sup>	[11.5] <sup>c</sup>	[11.5] <sup>c</sup>	[11.5] <sup>c</sup>	[11.5] <sup>c</sup>	[11.5] <sup>c</sup>											
30	[3.2] <sup>c</sup>	[4.4] <sup>c</sup>	4.6	4.5	4.3	[3.9] <sup>c</sup>	(4.0)	[6.5] <sup>c</sup>	[9.4] <sup>c</sup>	[10.4] <sup>c</sup>	[11.0]	[11.2]	[11.2]	[11.2]	[11.2]	[11.2]	[11.2]	[11.2]	[11.2]	[11.2]	[11.2]	[11.2]	[11.2]	[11.2]	[11.2]	[11.2]	[11.2]	[11.2]	[11.2]	[11.2]		
31																																
Median	(4.8)	(4.6)	4.3	4.0	3.7	4.7	(8.0)	(10.2)	(11.5)	(12.2)	(12.5)	(12.5)	(12.5)	(12.5)	(12.5)	(12.5)	(12.5)	(12.5)	(12.5)	(12.5)	(12.5)	(12.5)	(12.5)	(12.5)	(12.5)	(12.5)	(12.5)	(12.5)	(12.5)	(12.5)	(12.5)	
Count	29	30	29	29	28	27	27	23	20	18	16	15	14	9	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	

D INDICATES VALUES GREATER THAN 11.5 MG. THE UPPER LIMIT OF THE AUTOMATIC RECORDER VALUES IN EXCESS OF 11.5 MC, OBTAINED BY MANUAL OPERATION OF AUXILIARY RECORDER.

Sweep — Mc to — Mc In. min

Manual □ Automatic □

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TABLE 81  
Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.  
IONOSPHERIC DATA

$h'F_1$ , km  
(Characteristic)  
Observed at Washington, D.C.  
Lat 39°0'N, Long 77.5°W

November, 1946  
(Month)

Day	75° W												Mean Time										
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22
1											20.0	22.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0
2											21.0	20.0	19.0	21.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0
3											21.0	20.0	20.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0
4											21.0	20.0	20.0	21.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0
5											22.0	21.0	21.0	21.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0
6											21.0	23.0	22.0	21.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0
7											22.0	23.0	22.0	21.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0
8											20.0	20.0	20.0	21.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0
9											22.0	22.0	22.0	21.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0
10											c	c	c	c	c	c	c	c	c	c	c	c	c
11											22.0	22.0	22.0	21.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0
12											21.0	21.0	21.0	21.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0
13											22.0	22.0	22.0	21.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0
14											21.0	22.0	22.0	22.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0
15											22.0	22.0	22.0	22.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0
16											22.0	22.0	22.0	22.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0
17											19.0	19.0	19.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0
18																							
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31																							

Form adopted June 1946  
National Bureau Of Standards  
(Institution) J. L. S.  
Scaled by: M. S. L., A. M. K., B. W. D.  
Calculated by:  
Sweep 0.75 Mc to 1.5 Mc in 3.4 min  
Manual  Automatic   
U. S. GOVERNMENT PRINTING OFFICE: 1946 O - 7021

TABLE 82  
Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D. C.  
IONOSPHERIC DATA

$f_0 F_1$ , Mc  
(Characteristic)      Mc  
(Year)      November, 1946  
Observed at Washington, D. C.  
Lat. 39.0° N Long. 77.5° W

Form 60, June 1946

Day	National Bureau Of Standards (Institution)																								
	M. S. L.			J. L. S.			B. W. D.			A. M. K.			B. W. D.			A. M. K.			B. W. D.			A. M. K.			
1	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
2										L	L	C	L	L											
3										L	L	(L, O)	L	L											
4										L	L	C	L	L											
5										L	L	C	L	L											
6										L	L	C	L	L											
7										L	L	C	L	L											
8										L	L	C	C	C											
9										L	L	C	C	C											
10										L	L	C	C	C											
11										L	L	C	C	C											
12										L	L	C	C	C											
13										L	L	C	C	C											
14										L	L	(L, O)	L	L											
15										L	L	C	C	C											
16										L	L	C	C	C											
17										L	L	C	C	C											
18										L	L	C	C	C											
19										L	L	C	C	C											
20										L	L	C	C	C											
21										L	L	C	C	C											
22										L	L	C	C	C											
23										L	L	C	C	C											
24										L	L	C	C	C											
25										L	L	C	C	C											
26										L	L	C	C	C											
27										L	L	C	C	C											
28										L	L	C	C	C											
29										L	L	C	C	C											
30										L	L	C	C	C											
31										L	L	C	C	C											
	Median																								
	Count																								

Swept 0.75 Mc to 1.5 Mc in 3.4 min

Manual  Automatic

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

APR 13

Form adopted June 1946

h' E      km  
(Characteristic)      (km)  
Observed at Washington, D. C.

Lat 39.0° N, Long 77.5° W  
(Month)

November, 1946

National Bureau Of Standards  
(Institution)      J. L. S.

Scaled by: M. S. L., A. M. K., B. W. D.

	75° W												Mean Time						
	IONOSPHERE																		
	A																		
	Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17
1																			
2																			
3																			
4																			
5																			
6																			
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25																			
26																			
27																			
28																			
29																			
30																			
31																			
Middle Count																			
	110	110	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	9	27	26	29	26	29	26	29	26	29	26	29	26	29	26	29	26	29	26

Sweep 0.5 Mc to 15 Mc in 2 min.      9 5 GOVERNMENT PRINTING OFFICE 1946 O-12519

Manual  Automatic

TABLE 84  
Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.  
IONOSPHERIC DATA

(Characteristic)	f <sub>o</sub> E	Mc (Unit)	November 25, 1946												Lat 39°0'N Long 77°5'W												
			Observed at Washington, D.C.												Mean Time												
Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
1																											
2																											
3																											
4																											
5																											
6																											
7																											
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26																											
27																											
28																											
29																											
30																											
31																											
Median																											
Count																											

Sweep 0.75 Mc to 1.5 Mc in 3.4 min  
Manual  Automatic

U. S. GOVERNMENT PRINTING OFFICE 160-12121-1

TABLE 85  
IONOSPHERIC DATA

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

E<sub>S</sub> — Mc, km   November, 1946  
(Characteristic)      (Unit)

Observed at — Washington, D.C.  
Lat 39.0° N Long 77.5° W

National Bureau Of Standards  
(Institution)      J. L. S.

Scaled by: M. S. L.      Calculated by: A. M. K.      B. W. D.

		75° W												Mean Time												
Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
1	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C		
2	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C		
3	36 1/20	79 1/10	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C		
4	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C		
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C		
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C		
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C		
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C		
9	17 1/00	24 1/20	27 1/10	27 1/00	36 1/00	40 1/00	C	C	C	40 1/00	42 1/00	C	C	52 1/00	51 1/10	42 1/00	51 1/10	37 1/00	C	24 1/20	C	19 1/20	35 1/10	40 1/10	C	C
10	28 1/10	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
11	C	18 1/10	31 1/00	20 1/10	42 1/10	33 1/00	27 1/0	H 5 2/00	55 1/00	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
12	26 1/10	C	23 1/00	24 1/00	24 1/00	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
14	27 1/10	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
15	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
16	C	26 1/30	25 1/20	37 1/20	(37 1/00)	(40 1/10)	32 1/00	35 1/00	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
17	C	27 1/20	27 1/20	32 1/30	35 1/30	46 1/10	31 1/00	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
18	C	27 1/10	28 1/10	27 1/20	C	50 1/00	39 1/40	35 1/30	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
19	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
20	C	22 1/00	25 1/00	38 1/00	33 1/00	39 1/10	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
21	C	27 1/00	28 1/00	27 1/00	25 1/00	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
22	C	24 1/00	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
23	C	27 1/00	27 1/00	C	26 1/00	27 1/00	36 1/10	41 1/10	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
24	C	27 1/00	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
25	C	25 1/00	27 1/00	24 1/00	38 1/00	32 1/00	(38 1/00)	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
26	C	26 1/00	32 1/10	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
27	C	29 1/00	(27 1/00)	(25 1/00)	(28 1/00)	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
28	C	27 1/00	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
29	C	24 1/00	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
30	C	24 1/00	(24 1/00)	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
31																										
Median	2.6	2.5	2.6	2.6	2.0	2.0	2.9	3.4	3.9	3.8	3.8	4.0	3.8	3.5	3.5	2.7	2.8	2.4	2.4	2.7	2.9	2.8	2.7			
Count	16	12	14	28	26	26	27	15	22	13	11	4	11	7	7	12	15	15	12	11	10	10	9	9	9	

Sweep 0.75 Mc to 1.5 Mc in 3.4 min      Manual  Automatic

\* \* MEDIAN fE<sub>s</sub> LESS THAN LOWER FREQUENCY LIMIT OF RECORDER      \* INSUFFICIENT DATA FOR COMPUTING MEDIAN VALUE

Form adopted June 1948

U. S. GOVERNMENT PRINTING OFFICE: 1948 O - 1838

F2-M1500  
(Characteristic)  
Observed at Washington, D. C.

TABLE 86  
Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D. C.  
November, 1946  
(Month)

Lat. 39.0°N, Long. 77.5°W

Day	75° W Mean Time												B. W. D.												
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	1.7	(1.8)J	1.8	(1.9)	1.9	1.9F	1.9F	1.9F	1.9F	1.9	1.9	1.9	C	C	C	C	C	C	C	C	C	(2.0)	C	C	
2	(1.9)J	(1.9)J	1.8F	(1.6)	1.7	1.7	1.8F	(1.8)JF	1.9	1.9	1.9	1.9	(2.2)	C	C	C	C	C	C	C	C	C	(2.0)	J	2.1
3	(1.9)J	2.0	2.0	(2.0)	2.0	2.0	(1.9)F	(1.9)F	2.0	2.0	2.0	2.0	(2.2)J	C	C	C	C	C	C	C	C	C	C	(1.9)J	2.0
4	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.2	(2.2)	C	C	C	C	C	C	C	C	C	C	2.0
5	2.1	1.8	1.8F	1.8F	1.8	1.8	(2.0)J	(2.0)	2.0	2.0	2.0	2.0	(2.2)	C	C	C	C	C	C	C	C	C	C	C	2.0
6	(1.8)J	(1.8)J	(1.9)	1.7	1.8	1.8	1.9	C	C	C	C	C	(2.2)	2.1	(2.0)	D	D	D	D	D	D	D	D	D	(2.0)
7	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.1F	2.3	(2.3)	D	D	C	C	C	C	C	C	C	C	C	C	C	2.0	
8	1.9F	(2.0)J	2.0F	(1.9)	2.0F	1.9	2.0F	2.2	2.0	2.0	2.0	2.0	2.2	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	J
9	(2.0)J	2.0	1.9	1.9	1.9	2.0	1.7	1.9	2.1	(2.2)	(2.3)	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	J
10	(1.8)J	(1.9)J	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
11	C	1.8	(2.0)J	2.1	1.8	1.6	1.6	1.7	(2.0)	(2.1)	(2.0)	D	D	D	D	D	D	D	D	D	D	D	D	D	
12	(1.6)	(1.5)J	1.6	(1.6)	1.7	1.7	1.7	1.8	(2.0)	(2.1)	(2.0)	(2.2)	D	D	D	D	D	D	D	D	D	D	D	D	
13	(2.0)	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	(2.2)	C	(2.1)	D	(4.9)	(1.9)	2.0	(2.1)	C	1.9	(1.9)J
14	(1.9)J	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.1	2.1	2.0	(2.2)	C	(2.1)	C	(2.0)	C	C	C	C	C
15	1.9	(1.9)J	/9	2.0	1.9	1.9	1.8	1.8	C	(2.1)	(2.1)	(2.1)	(2.0)	C	C	C	C	C	C	C	C	C	C	C	(1.8)J
16	(1.9)J	C	(1.8)J	(1.8)J	C	(1.8)J	(1.8)J	(1.8)J	(1.8)J	(1.8)J	(1.8)J	(1.8)J	C	C	C	C	C	C	C	C	C	C	C	C	1.9
17	(1.9)J	(1.8)J	(1.9)J	(1.9)J	2.0	(2.1)J	(2.0)	(2.1)J	2.0F	2.0F	2.0F	2.1	(2.1)	C	C	C	C	C	C	C	C	C	C	C	(2.0)J
18	(2.0)J	(1.9)J	(1.9)J	(1.9)J	2.0	1.9	1.9	2.1	2.1	(2.3)	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
19	C	(1.9)J	1.8	1.8	1.8	C	C	C	C	C	C	C	(2.1)	C	C	C	C	C	C	C	C	C	C	C	(1.8)J
20	(1.9)J	1.6	1.7	1.8	1.9	1.9	1.9	1.9	1.9	(2.0)	(2.1)	C	C	C	C	C	C	C	C	C	C	C	C	(1.8)J	
21	(1.8)	(1.8)	(1.9)J	(1.9)J	1.9	1.9	1.9	1.9	1.9	(2.0)	C	C	2.0	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
22	(1.9)J	1.9	1.8F	1.8F	1.7F	(1.7)	C	2.1	2.1	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
23	2.0	1.9	1.8	1.9	1.9	2.0	(1.9)	2.0	(2.3)	2.2	C	C	C	C	C	C	C	C	C	C	C	C	C	2.1	
24	(1.9)J	1.7	1.6	1.6	1.6	1.7	1.6	1.6	2.0	(2.1)	2.1	2.1	(3.2)	C	C	C	C	C	C	C	C	C	C	C	1.9
25	1.9	1.9	2.0	2.1	2.0	2.0	1.9	1.9	1.9	C	(2.1)	(2.2)	C	C	C	C	C	C	C	C	C	C	C	1.9	
26	1.9	1.8	1.9	(2.0)	2.1	2.0	(2.1)	(2.1)	C	C	C	C	2.2	2.1	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	
27	(1.9)	1.9	(1.9)	(2.0)J	(2.0)J	1.9	2.0	(2.3)	2.4	2.1	2.4	2.0	(2.1)	C	C	C	C	C	C	C	C	C	C	C	1.9
28	1.8	1.8	1.9	2.0	2.0	2.0	(2.0)	C	(2.1)	2.1	2.1	2.1	(1.9)	2.0	2.0	(2.2)	C	C	C	C	C	C	C	C	1.9
29	(1.9)J	(1.9)J	(1.8)J	1.9	2.1	2.1	C	(2.2)	2.3	2.3	2.2	2.2	2.1	(2.0)	1.9	2.0	2.1	C	C	C	C	C	C	C	1.9
30	(2.0)J	(2.0)	1.8	1.9	2.0	1.9	1.9	1.9	1.9	(2.2)	(2.2)	C	C	2.1	2.0	C	(1.9)	C	C	C	C	C	C	C	
31																									
Median	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.1	(2.2)	2.1	2.1	2.0	2.0	2.0	2.0	2.0	(2.0)	(2.0)	(2.0)	(2.0)	(2.0)	(2.0)	1.9	
Count	29	29	30	29	29	28	28	23	24	19	17	16	16	14	14	14	14	14	14	14	14	14	14	14	2.5

Sweep — Mc ta — Mc in — min  
Manual □ Automatic □

Form adopted June 1946  
U. S. GOVERNMENT PRINTING OFFICE 1610-1025-10

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TABLE 87  
Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.  
IONOSPHERIC DATA

Form adopted June 1946  
National Bureau Of Standards  
(Institution) J. L. S.

Observed at Washington, D. C.  
Lat 39.0°N Long 77.5°W

F2 - M3000 (Unit)  
(Characteristic)

Scaled by: M. S. L. Calculated by: A. M. K. B. W. D.

		75° W Mean Time																						
Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	2.6	(2.7) <sup>J</sup>	2.8	(2.8)	2.6	2.8 <sup>F</sup>	C	C	C	C	C	C	C	C	C	C	C	C	C	C	(3.0) <sup>J</sup>	(3.0) <sup>J</sup>	3.1	
2	(2.9) <sup>J</sup>	2.7 <sup>F</sup>	(2.5)	2.6	2.8 <sup>F</sup>	(2.7) <sup>J</sup>	3.2	(3.3) <sup>J</sup>	3.2	3.0	D	D	D	D	D	D	D	D	D	D	3.0	2.8	(2.8) <sup>J</sup>	
3	(2.8) <sup>J</sup>	3.0	(3.0) <sup>F</sup>	(2.8)	2.9 <sup>F</sup>	2.9	3.0	C	C	C	C	C	C	C	C	C	C	C	C	C	(2.9)	(2.9)	3.0	
4	3.0	2.9	2.8	2.8	2.9	2.8	2.9	3.2	3.3	(3.2)	C	C	D	D	D	D	D	D	D	D	D	D	D	
5	3.1	2.7	2.7 <sup>F</sup>	2.8	2.7	(3.0) <sup>J</sup>	2.9	(3.2)	3.1	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
6	(2.7) <sup>J</sup>	(2.8) <sup>J</sup>	(2.9)	2.7	2.7	2.7	2.9	C	C	(3.2)	3.1	(3.0)	D	D	D	D	D	D	D	D	D	D	D	
7	2.9	2.9	2.9	2.9	3.0	3.0	3.1 <sup>F</sup>	3.3	(3.3)	D	D	D	C	C	C	C	C	C	C	C	C	C	C	
8	2.8 <sup>F</sup>	(2.9) <sup>J</sup>	3.0 <sup>F</sup>	(2.9)	3.0 <sup>F</sup>	2.7	3.0 <sup>F</sup>	3.3	3.0	3.2	3.1	3.1	C	C	C	C	C	C	C	C	C	C	C	
9	(3.0) <sup>J</sup>	3.0	2.9	2.9	3.0	2.8	2.8	3.0	3.3	(3.3)	3.1	3.1	C	C	C	C	C	C	C	C	C	C	C	
10	(2.7) <sup>J</sup>	(2.8) <sup>J</sup>	(2.9) <sup>J</sup>	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
11	C	2.7	(3.0) <sup>J</sup>	3.1	2.2	2.5	2.6	(3.0)	(3.1)	(3.0)	D	D	D	D	D	D	D	D	D	D	D	D	D	
12	(2.5) <sup>J</sup>	(2.3) <sup>J</sup>	2.5	(2.7)	2.6	2.6	2.7	(2.9)	(3.1)	(3.0)	D	D	D	D	D	D	D	D	D	D	D	D	D	
13	(3.0) <sup>J</sup>	2.9	2.9	2.9	2.9	2.9	2.9	2.9	3.0	3.2	(3.3)	C	(3.1)	D	D	D	D	D	D	D	D	D	D	
14	(2.9) <sup>J</sup>	2.8	2.7	2.8	2.9	2.9	2.9	(2.9)	3.1	3.1	3.0	3.0	(3.2)	C	(3.0)	C	C	C	C	C	C	C	C	
15	2.9	(2.9) <sup>J</sup>	2.9	3.0	2.9	2.8	(2.8)	C	(3.1)	(3.0)	C	(2.9)	C	C	(3.0)	C	C	C	C	C	C	C	C	
16	(2.8)	C	(2.7) <sup>J</sup>	(2.7)	C	(2.7)	(2.7)	(3.0)	3.1	(3.1)	C	(3.0)	C	C	C	C	C	C	C	C	C	C	C	
17	(2.6) <sup>J</sup>	(2.7) <sup>J</sup>	(2.8)	2.9	(3.1) <sup>J</sup>	3.0 <sup>F</sup>	3.0	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
18	(3.0)	(2.9) <sup>J</sup>	(2.9)	3.0	2.9	3.1	3.2	(3.3)	C	C	3.1	D	C	C	C	C	C	C	C	C	C	C	C	
19	C	(2.9) <sup>J</sup>	(2.9)	2.7	2.7	C	C	C	C	C	C	(3.1)	2.8	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
20	(2.9) <sup>J</sup>	2.5	2.7	2.7	2.9	2.9	3.0	(3.0)	(3.1)	C	3.2	2.9	3.0	C	3.0	3.0	C	C	C	C	C	C	C	
21	(2.8)	(2.7) <sup>J</sup>	(2.8) <sup>J</sup>	(2.8)	2.8	2.8	2.7	2.8	(3.0)	3.1	(3.1)	C	(3.0)	2.9	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
22	(2.8) <sup>J</sup>	2.8	2.7	2.7 <sup>F</sup>	2.7	(2.7)	C	C	3.1	3.1	3.1	2.9	2.8	(2.9)	C	C	C	C	C	C	C	C	C	C
23	3.0	2.8	2.7	2.8	2.8	2.8	2.9	(2.8)	3.0	(3.3)	3.2	C	C	C	C	C	C	C	C	C	C	C	C	
24	(2.9) <sup>J</sup>	2.7	2.5	2.5	2.5	2.6	2.5	3.0	(3.2)	3.1	3.1	(3.2)	C	C	C	C	3.2	3.0	2.9	3.0	3.0	3.0	3.0	3.0
25	2.8	2.9	3.0	3.1	3.0	2.7	2.9	C	(3.1)	(3.2)	C	C	C	C	C	C	3.3	3.1	C	C	C	C	C	
26	2.9	2.8	2.9	(3.0)	3.1	3.0	(3.1)	C	C	3.2	3.1	3.0	2.9	(3.0)	C	C	C	C	C	C	C	C	C	
27	(2.9)	2.9	(2.9)	(3.0) <sup>J</sup>	(3.1) <sup>J</sup>	2.9	3.0	(3.0)	3.3	3.4	3.1	3.4	3.0	(3.1)	2.9	(3.0)	(3.0)	(3.0)	(3.0)	(3.0)	(3.0)	(3.0)	(3.0)	(3.0)
28	2.8	2.7	2.8	3.0	3.0	(2.9)	C	(3.1)	(3.2)	3.2	3.0	3.1	(2.9)	3.0	2.9	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
29	(2.9) <sup>J</sup>	(2.9) <sup>J</sup>	(2.8)	2.9	3.1	2.9	(3.2)	(3.4)	3.2	3.1	3.2	(3.0)	2.9	3.0	3.1	C	C	C	C	C	C	C	C	C
30	(2.9) <sup>J</sup>	(2.9)	2.8	2.9	3.0	2.8	2.9	(3.2)	(3.2)	3.2	(3.1)	C	(2.7)	(2.8)	C	C	C	C	C	C	C	C	C	
31																								
Median	(2.9)	2.8	2.8	2.8	2.9	2.8	2.9	3.1	(3.2)	3.1	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Count	28	29	30	29	28	25	23	24	19	17	16	15	14	10	6	5	9	15	21	24	25	25	25	25

Sweep Mc 10 — Mc In min  
Manual  Automatic

TABLE 88  
Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.  
IONOSPHERIC DATA

Form adopted June 1946

Fl-M3000, (Unit)  
(Characteristic) Lat 39.0°N, Long 77.5°W

Observed at Washington, D. C.

November, 1946 (Month)

National Bureau Of Standards

Scaled by: M. S. L. (Institution) J. L. S.

Day	75°W Mean Time																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1										L	L	C	C	L	L										
2										L	L	(44)	L	L	L										
3										L	L	L	C	L	L										
4										L	L	L	L	L	L										
5										L	L	L	L	L	L										
6										L	L	L	L	L	L										
7										L	L	L	L	L	L										
8										L	L	L	L	L	L										
9										C	C	C	C	C	C										
10										C	C	C	C	C	C										
11										L	L	L	L	L	L										
12										L	L	L	L	L	L										
13										L	L	L	L	L	L										
14										L	L	L	L	L	L										
15										L	L	L	L	L	L										
16										L	L	L	L	L	L										
17										L	L	L	L	L	L										
18										L	L	L	L	L	L										
19										L	L	L	L	L	L										
20										L	L	L	L	L	L										
21										L	L	L	L	L	L										
22										L	L	L	L	L	L										
23										L	L	L	L	L	L										
24										L	L	L	L	L	L										
25										L	L	L	L	L	L										
26										L	L	L	L	L	L										
27										L	L	L	L	L	L										
28										L	L	L	L	L	L										
29										L	L	L	L	L	L										
30										L	L	L	L	L	L										
31										L	L	L	L	L	L										
Median Count																									

Sweep 0.25 Mc to 11.5 Mc in 3.4 min  
Manual  Automatic

U. S. GOVERNMENT PRINTING OFFICE: 1640-1760-18

TABLE 89  
Ionospheric DATA

**E-M1500**, **November**, 1946  
 (Characteristic) **(Umt)** **(Month)**  
**Washington, D. C.**  
 Observed at **39.0°N 77.5°W**

Manual  Automatic

Table 91Sudden Ionosphere Disturbances Observed at Washington, D.C.

Day	GCT		Location of Transmitters	Relative intensity at minimum*	Other Phenomena
	Beginning	End			
November	1653	1730	Ohio, D.C., Mexico, New York	0.1	Terr.mag.pulse** 1650-1700
	21	1630	Ohio, D.C., England, Mexico, Ontario	0.02	
	24	1347	D.C., England, Mexico, Ontario	0.03	
	24	1552	D.C., Mexico, Ontario	0.3	
	24	1740	D.C., Mexico, Ontario	0.2	Terr.mag.pulse** 1735-1750
	25	1651	Ohio, D.C., Chile, Mexico, Ontario	0.2	
	26	1655	Ohio, D.C., Chile, Ontario	0.1	

\*Ratio of received field intensity during SID to average field intensity before and after, for station W8XAL, 6080 kilocycles, 600 kilometers distant, for all SID except the following: Station XENW, 9500 kilocycles, received at Sterling, Va., 3000 kilometers distant, was used for the SID occurring on November 24.

\*\*As observed on Cheltenham magneogram of the United States Coast and Geodetic Survey.

Table 90  
Ionospheric Storminess, November 1946

Day November	Ionosphere Character*		Principal Storms		Geomagnetic Character**	
	00-12 GCT	12-24 GCT	Beginning GCT	End GCT	00-12 GCT	12-24 GCT
1	1	2			3	3
2	3	***			2	1
3	1	***			1	1
4	2	***			1	2
5	2	2			2	2
6	1	2			3	3
7	1	2			2	1
8	1	1			0	2
9	0	1			2	2
10	1	***			2	2
11	***	***			3	2
12	2	***			3	2
13	0	2			1	2
14	1	2			0	1
15	1	2			2	3
16	2	3			3	2
17	2	***			1	2
18	1	1			1	1
19	1	1			3	3
20	2	1			2	3
21	2	1			4	3
22	2	0			3	2
23	1	***			2	1
24	3	1			3	3
25	1	1			3	3
26	1	1			2	1
27	1	1			0	0
28	1	1			1	1
29	1	1			0	0
30	1	3			0	1

\*Ionosphere Character figure (I-figure) for ionospheric storminess at Washington, D.C., during 12-hour period, on an arbitrary scale of 0 to 9, 9 representing the greatest disturbance.

\*\*Average for 12 hours of American magnetic K-figure, determined by a number of observatories, on an arbitrary scale of 0 to 9, 9 representing the greatest disturbance.

\*\*\*No readable record. Refer to Table 79 for detailed explanation.

Table 92

## Provisional Radio Propagation Quality Figures

October 1946

Compared with CRPL Warnings and CRPL Probable Disturbed Period Forecasts

Day	North Atlantic				North Pacific				Quality Figure Scale:
	Quality Figure	CRPL* Warning	CRPL** Probable Disturbed Period Forecast	Geo-magnetic K <sub>A</sub>	Quality Figure	CRPL* Warning	CRPL** Probable Disturbed Period Forecast	Geo-magnetic K <sub>A</sub>	
	01-12 GCT	13-24 GCT	01-12 GCT	13-24 GCT	01-12 GCT	13-24 GCT	01-12 GCT	13-24 GCT	
1	(4) 5	X X		3 3	6 8	X X		3 3	
2	6 5	X		2 2	5 5	X		2 2	
3	7 6			2 2	6 5			2 2	
4	6 6		X	2 2	6 7		X	2 2	
5	7 6		X	2 3	6 6		X	2 3	
6	6 6			3 3	5 5			3 3	
7	6 5			3 2	5 8			3 2	
8	6 7			1 2	8 6			1 2	
9	5 6			4 3	6 7			4 3	
10	6 5			2 2	5 5			2 2	
11	6 6			2 2	5 (4)			2 2	
12	6 6			2 1	6 5			2 1	
13	6 6			1 1	8 8			1 1	
14	7 6			1 1	7 6			1 1	
15	7 7			1 2	6 5			1 2	
16	5 6			2 2	6 5			2 2	
17	6 6			1 1	7 7			1 1	
18	7 7			1 1	7 (4)			1 1	
19	7 7		X	0 2	5 (4)		X	0 2	
20	6 7	X		3 3	6 (4)			3 3	
21	7 7		X	1 2	7 6		X	1 2	
22	7 6			2 1	8 -			2 1	
23	6 7			2 1	8 5			2 1	
24	6 6		X	1 2	7 5		X	1 2	
25	6 7		X	2 1	7 (4)		X	2 1	
26	5 5		X	3 3	5 5		X	3 3	
27	(3) 5	X X	X	5 4	7 (4)	X X	X	5 4	
28	5 5	X	X	2 1	5 (4)	X	X	2 1	
29	5 6			2 1	(4) (4)			2 1	
30	6 6			1 1	5 (3)			1 1	
31	5 5			2 3	5 (4)			2 3	

## Score:

H	2	1		1	5
M	0	1		9	5
G	26	20		19	16
(S)	1	2		1	2
S	2	7		1	3

\*Broadcast on WWV, Washington, D. C. Times of warnings recorded to nearest half-day as broadcast.

\*\*In addition to dates marked X, the following were designated as probable disturbed days on forecasts more than eight days in advance of said dates: October 14-18.

## Quality Figure Scale:

- 1 = Useless
- 2 = Very poor
- 3 = Poor
- 4 = Poor to fair
- 5 = Fair
- 6 = Fair to good
- 7 = Good
- 8 = Very good
- 9 = Excellent

## Symbols

X Warning given or probable disturbed date.

H Quality 4 or worse on day or half-day of warning.

M Quality 4 or worse on day or half-day of no warning.

G Quality 5 or better on day of no warning.

(S) Quality 5 on day of warning.

S Quality 6 or better on day of warning.

( ) Quality 4 or worse (disturbed).

Geomagnetic K<sub>A</sub> on the standard scale of 0 to 9, 9 representing the greatest disturbance.

Table 93

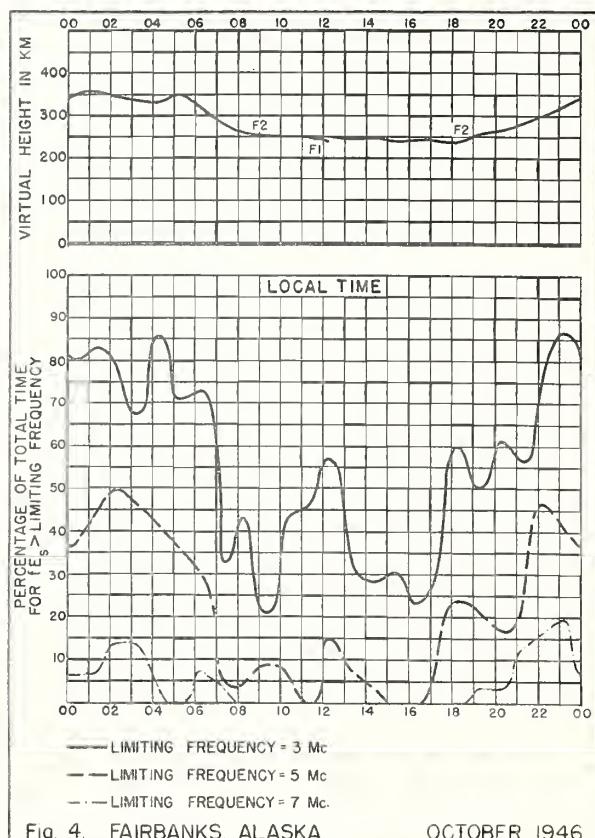
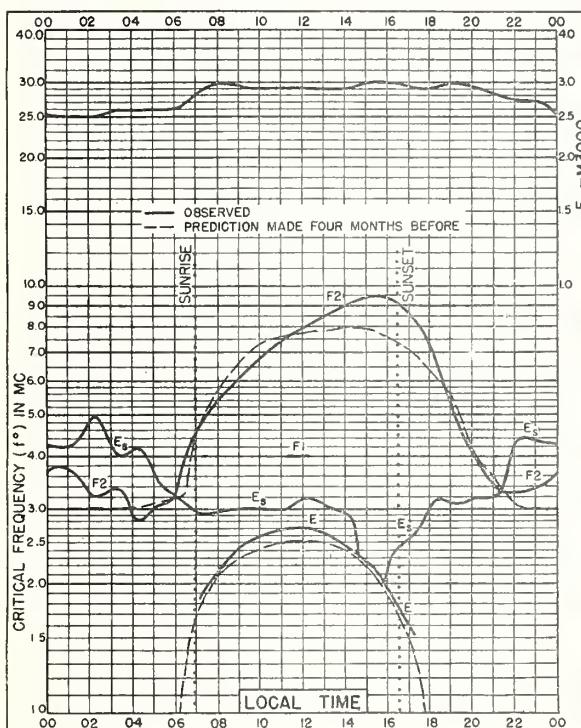
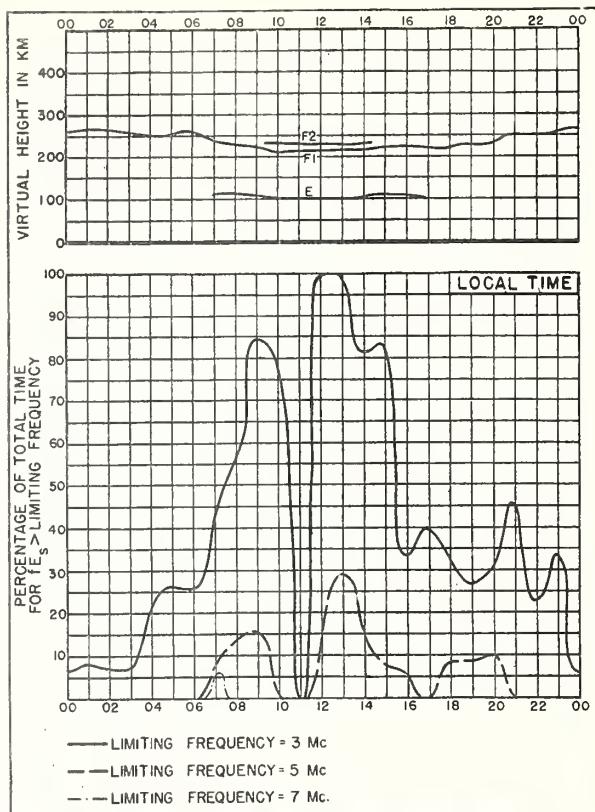
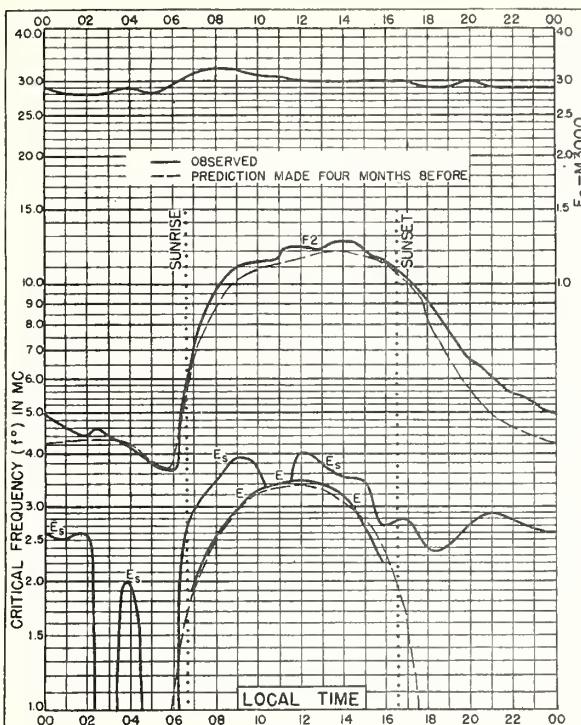
Daily Median Values of American Relative Sunspot Numbers\*November 1946

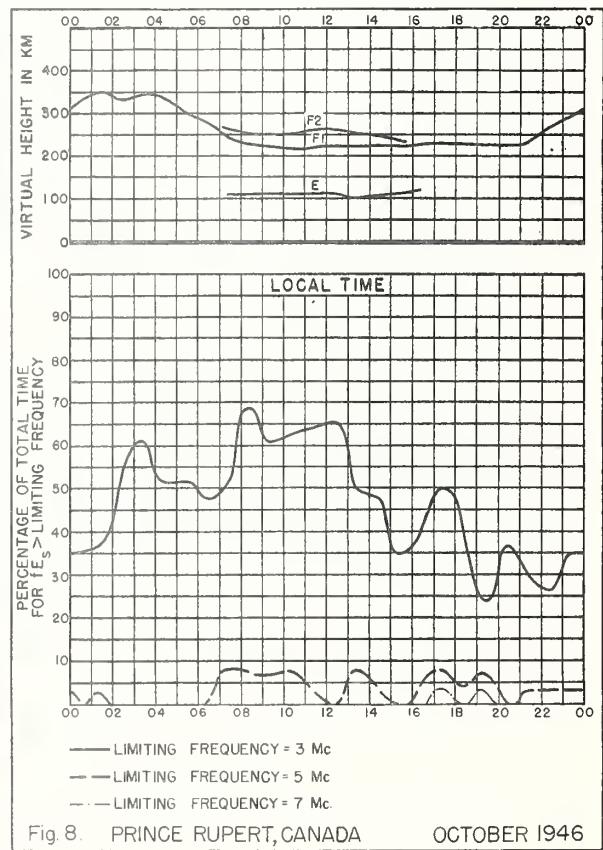
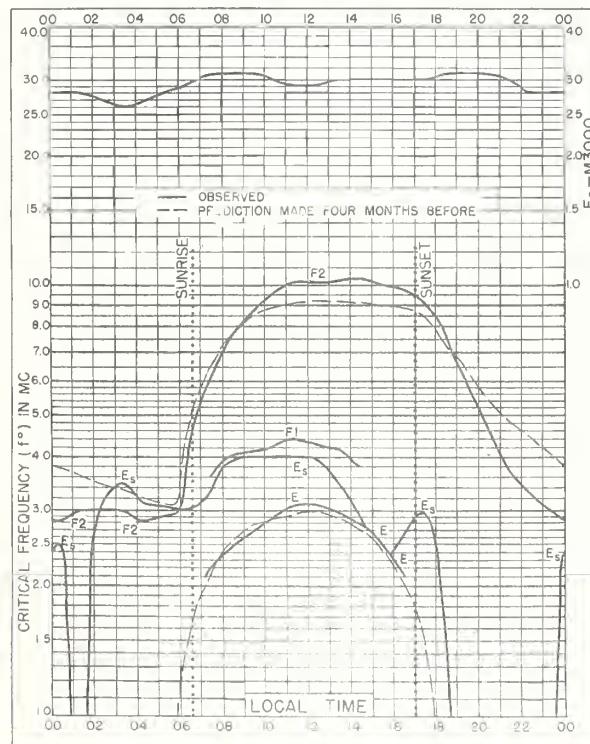
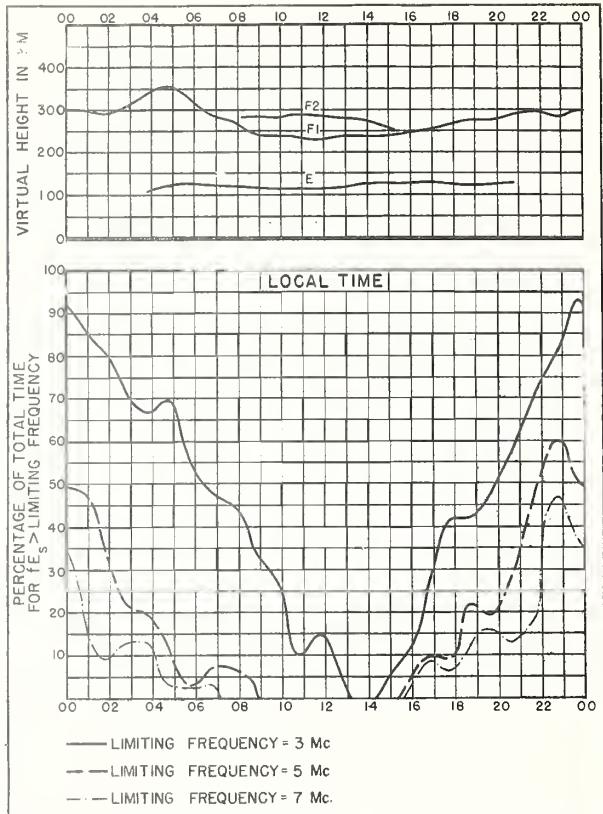
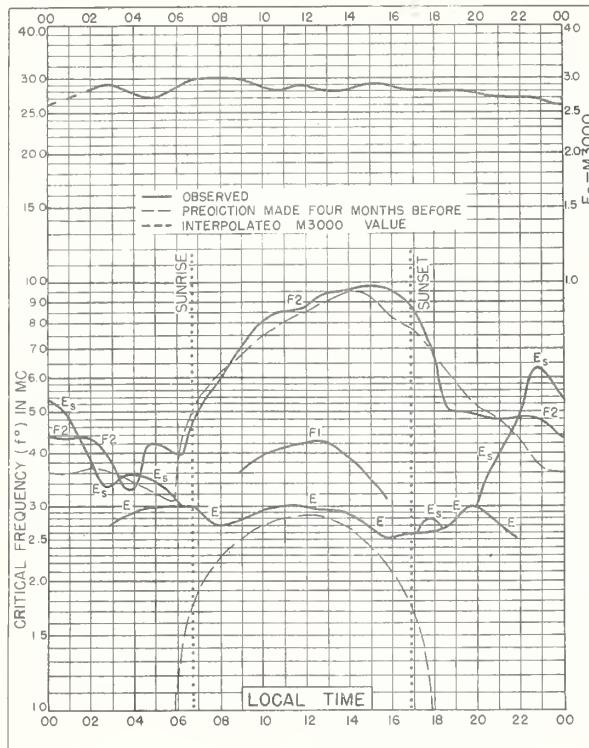
Date	No.	Date	No.
1	86	16	157
2	59	17	146
3	54	18	143
4	79	19	142
5	76	20	132
6	104	21	150
7	114	22	134
8	103	23	141
9	120	24	142
10	123	25	125
11	142	26	100
12	156	27	94
13	141	28	92
14	165	29	94
15	164	30	71

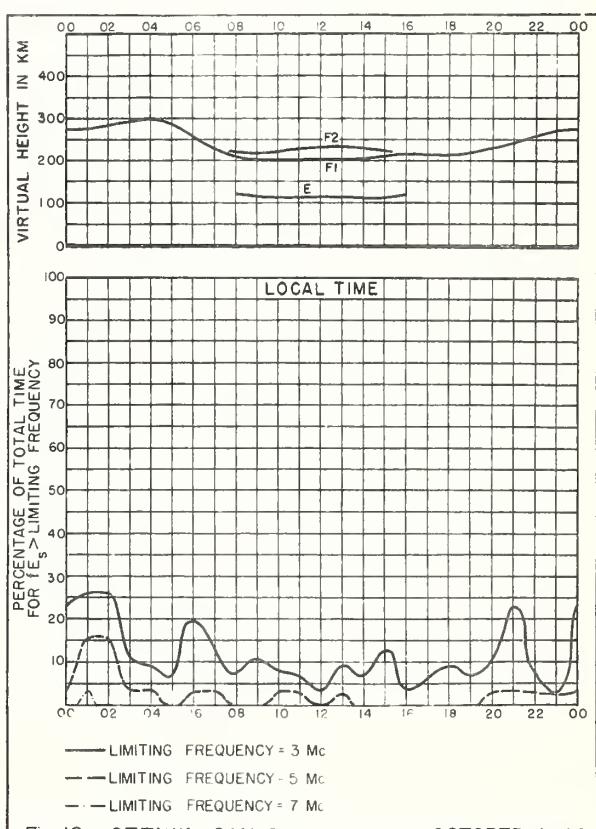
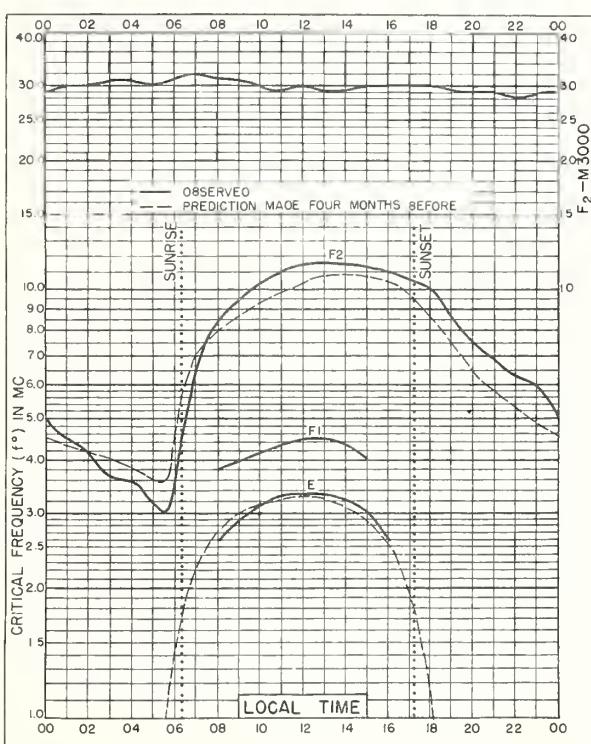
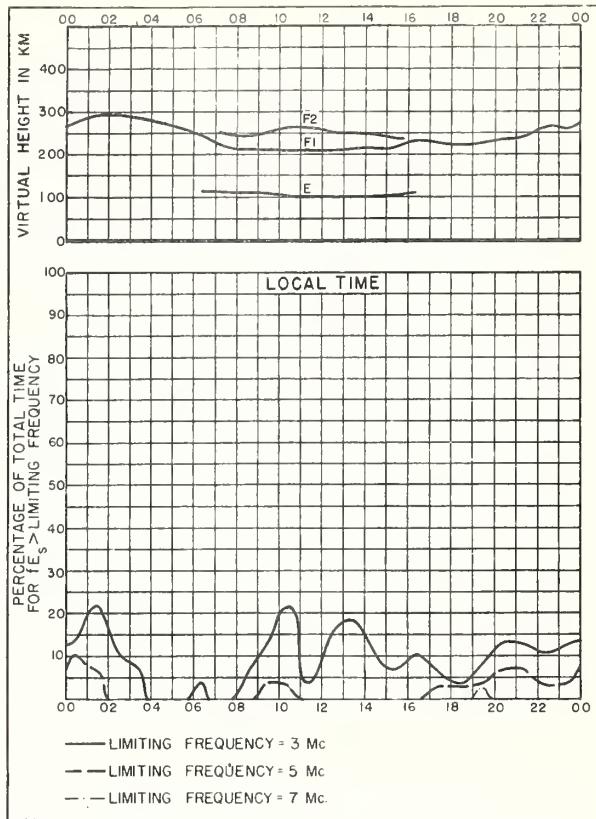
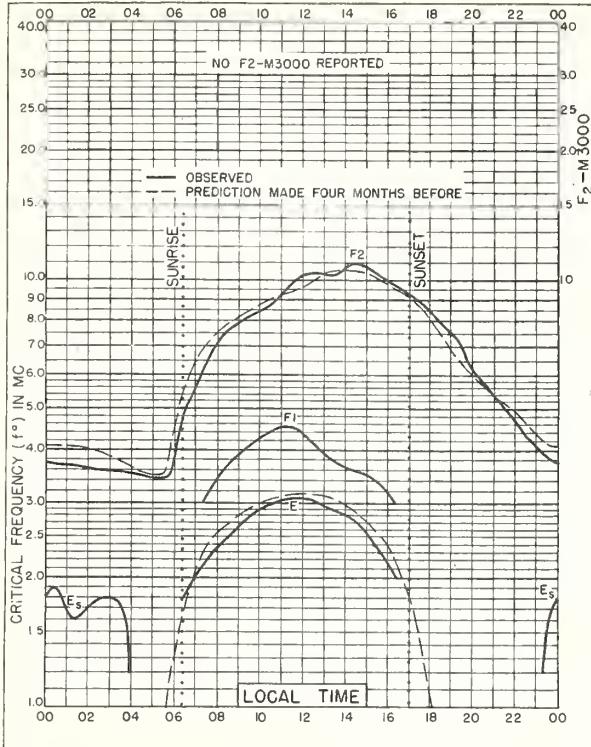
  

No. of Days . . . . .	30	Mean . . . . .	118.3
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\* Median of data from 14 observers.







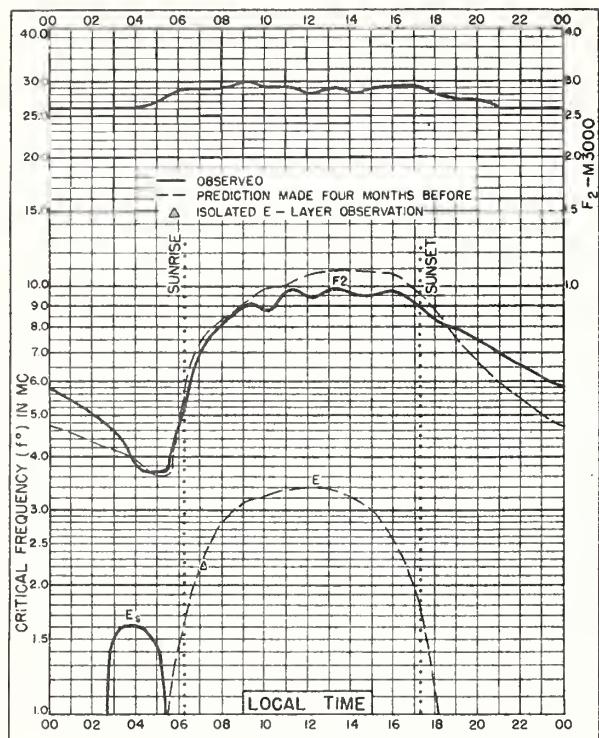


Fig. 13. BOSTON, MASSACHUSETTS  
42.4°N, 71.2°W OCTOBER 1946

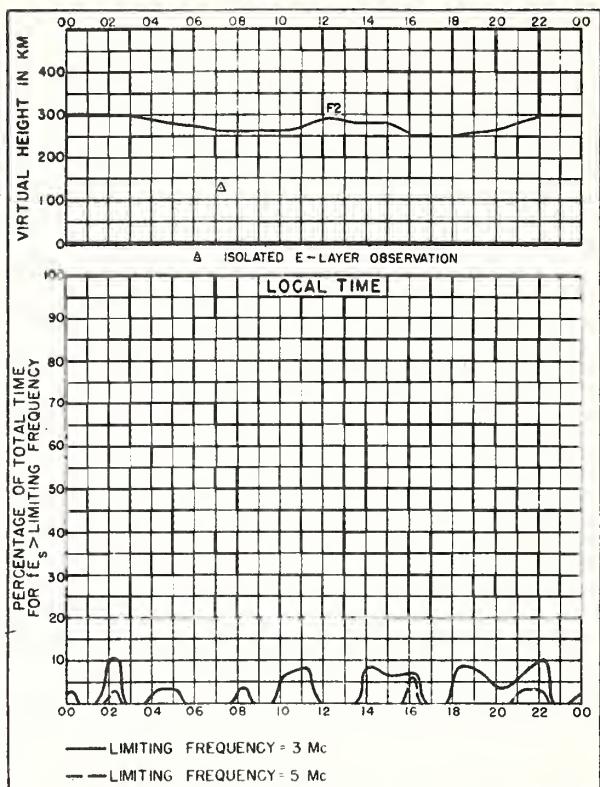


Fig. 14. BOSTON, MASSACHUSETTS OCTOBER 1946

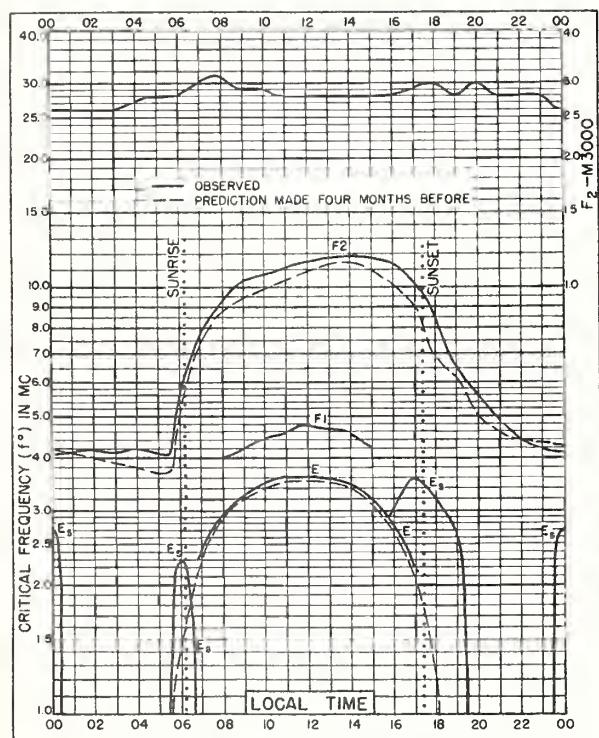


Fig. 15. SAN FRANCISCO, CALIFORNIA  
37.4°N, 122.2°W OCTOBER 1946

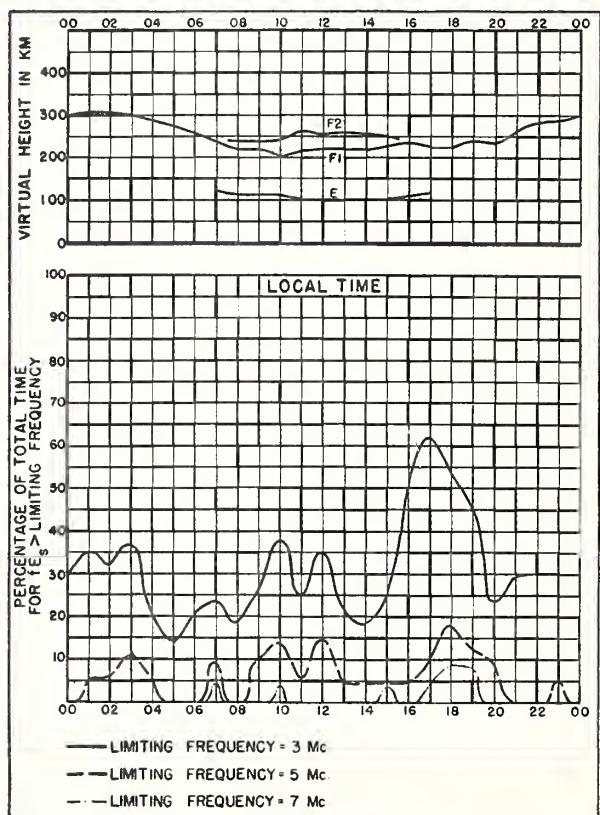
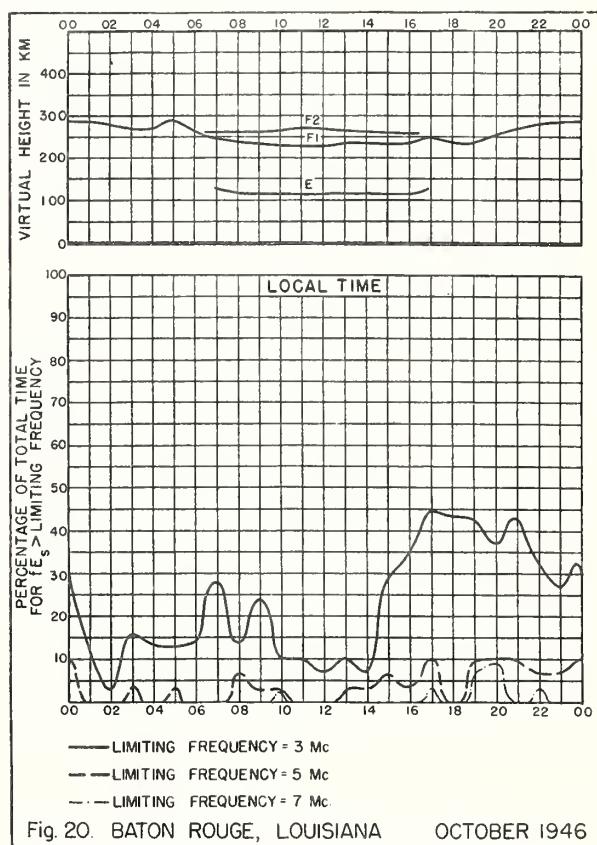
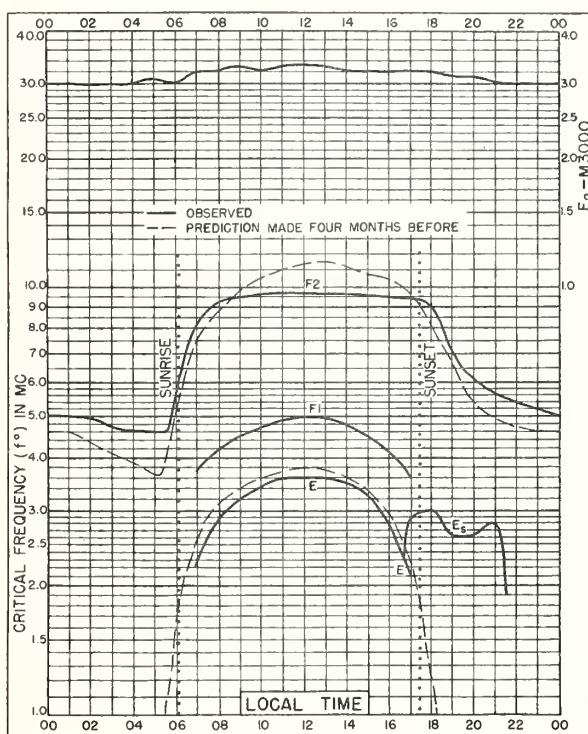
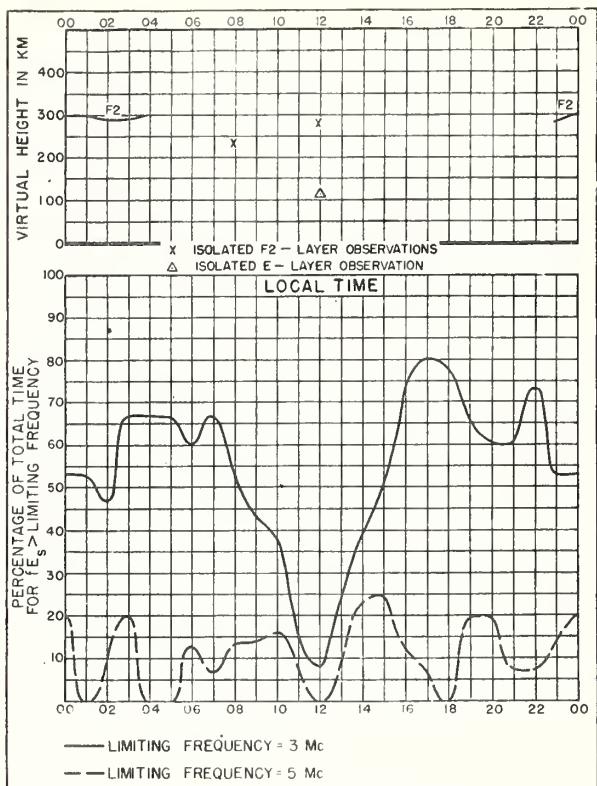
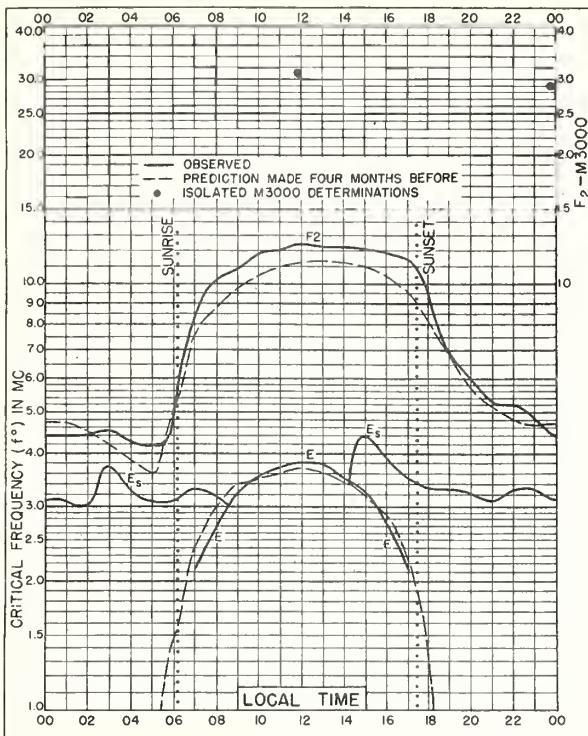


Fig. 16. SAN FRANCISCO, CALIFORNIA OCTOBER 1946



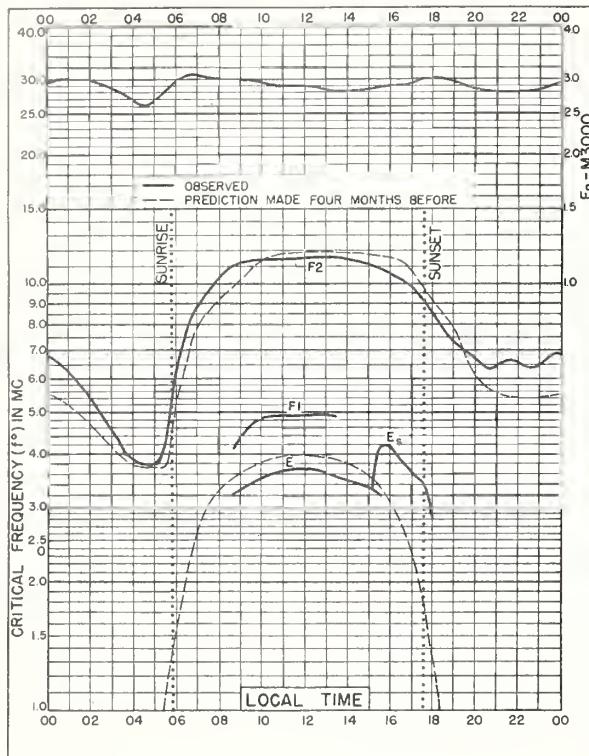


Fig. 21. SAN JUAN, PUERTO RICO  
18.4°N, 66.1°W OCTOBER 1946

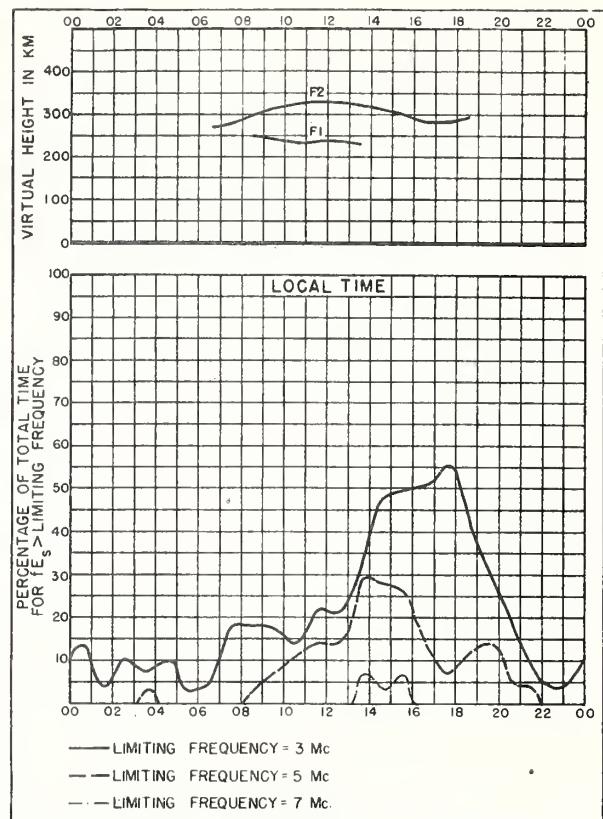


Fig. 22. SAN JUAN, PUERTO RICO OCTOBER 1946

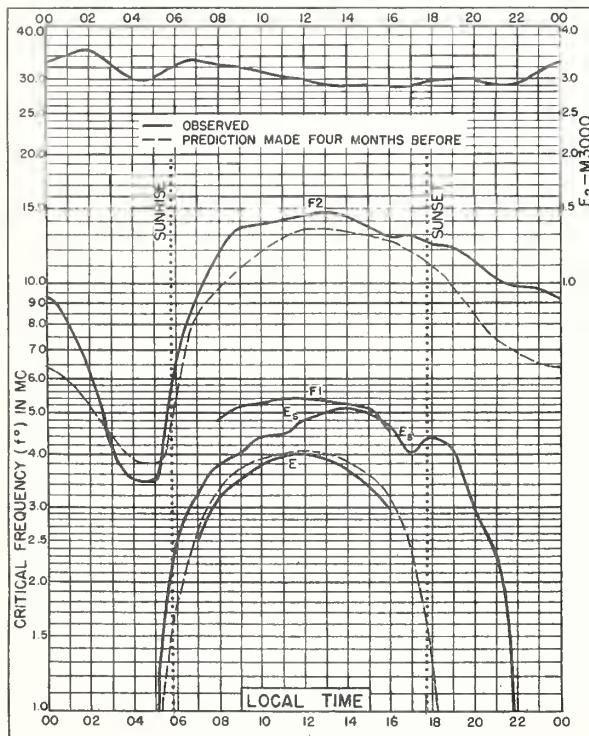


Fig. 23. TRINIDAD, BRIT. WEST INDIES  
10.6°N, 61.2°W OCTOBER 1946

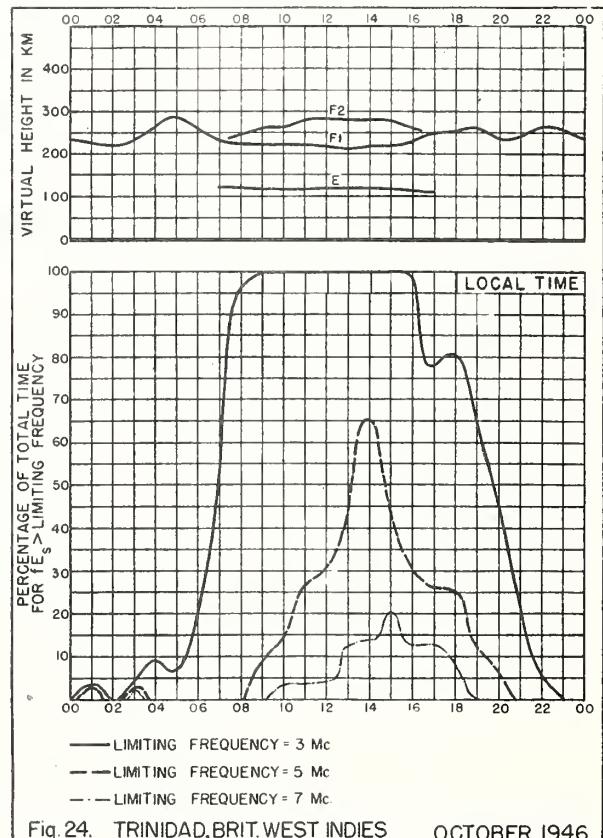
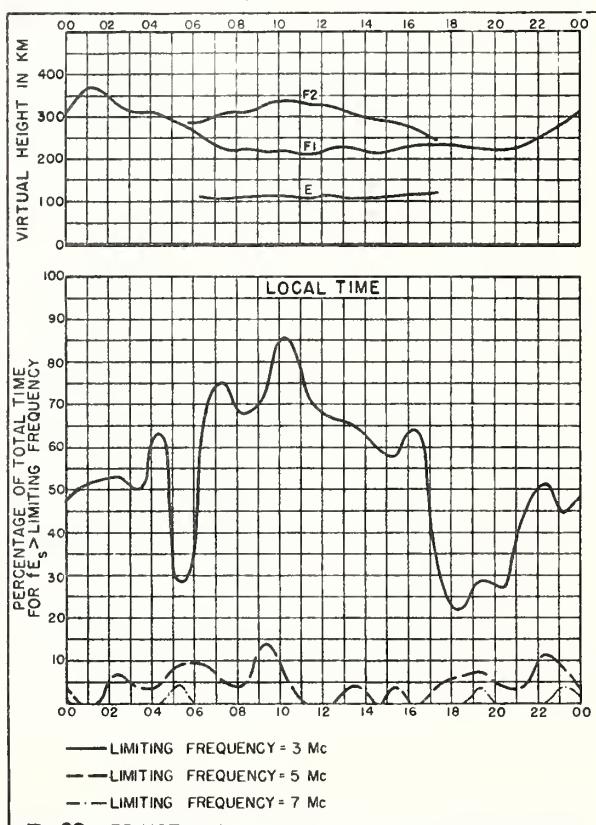
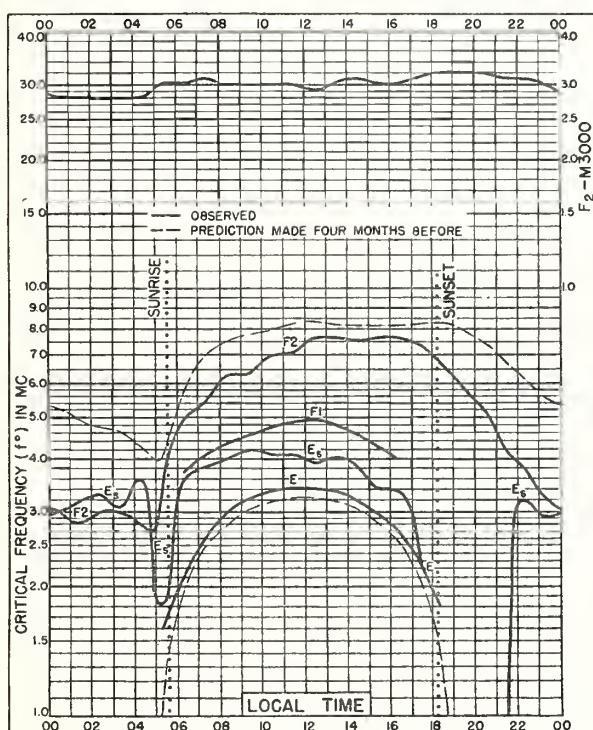
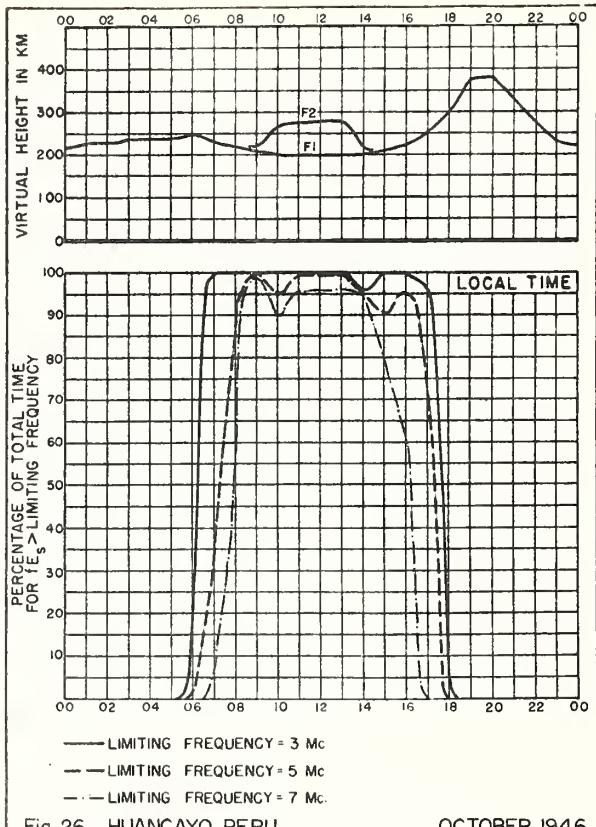
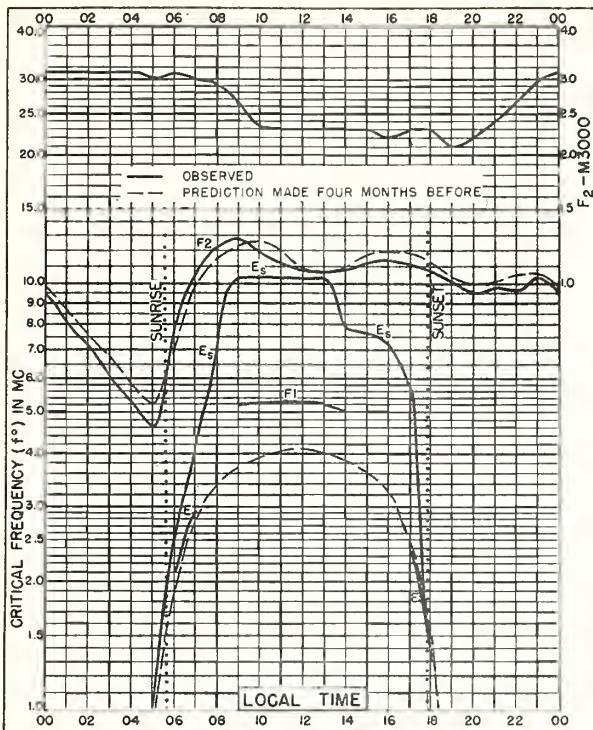


Fig. 24. TRINIDAD, BRIT. WEST INDIES OCTOBER 1946



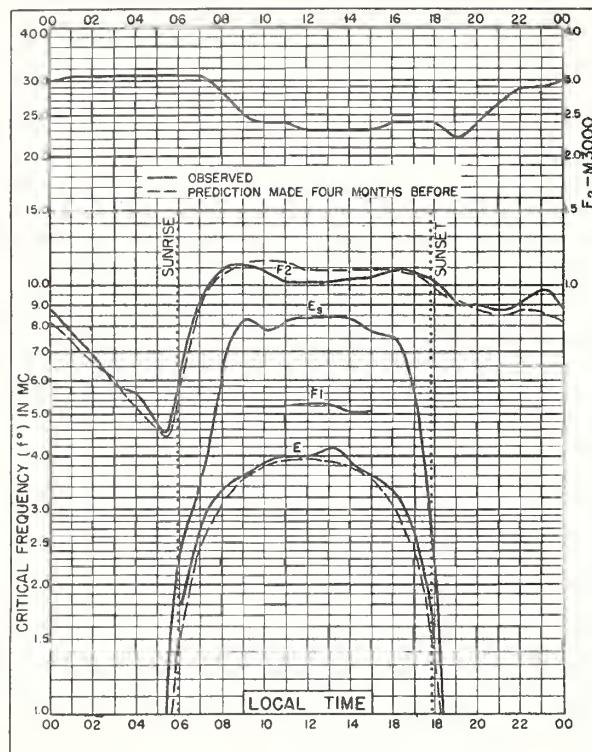


Fig. 29. HUANCAYO, PERU

12.0°S. 75.3°W

SEPTEMBER 1946

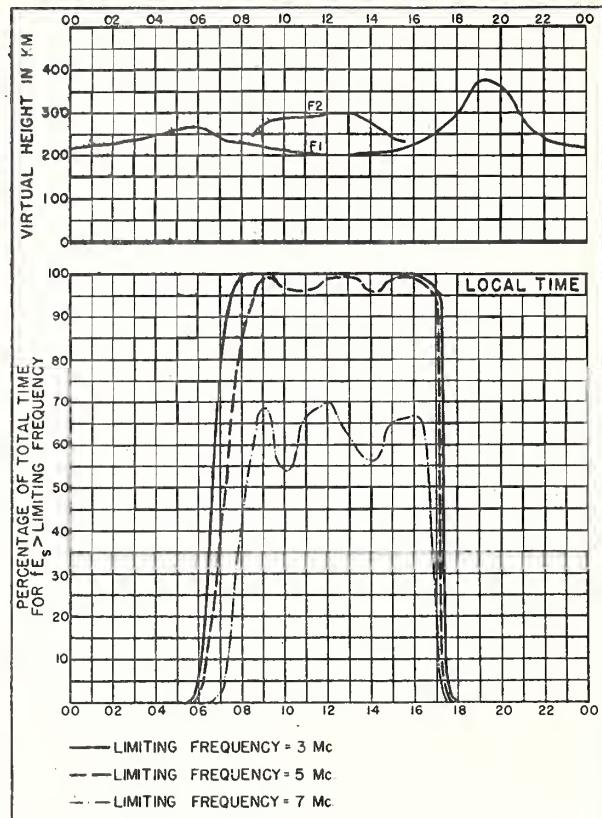


Fig. 30. HUANCAYO, PERU

SEPTEMBER 1946

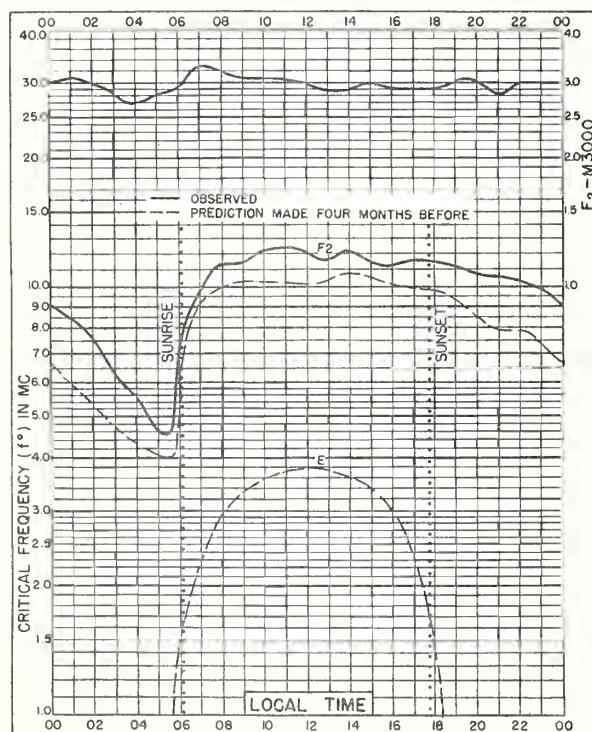


Fig. 31. RAROTONGA I.

21.3°S, 159.8°W

SEPTEMBER 1946

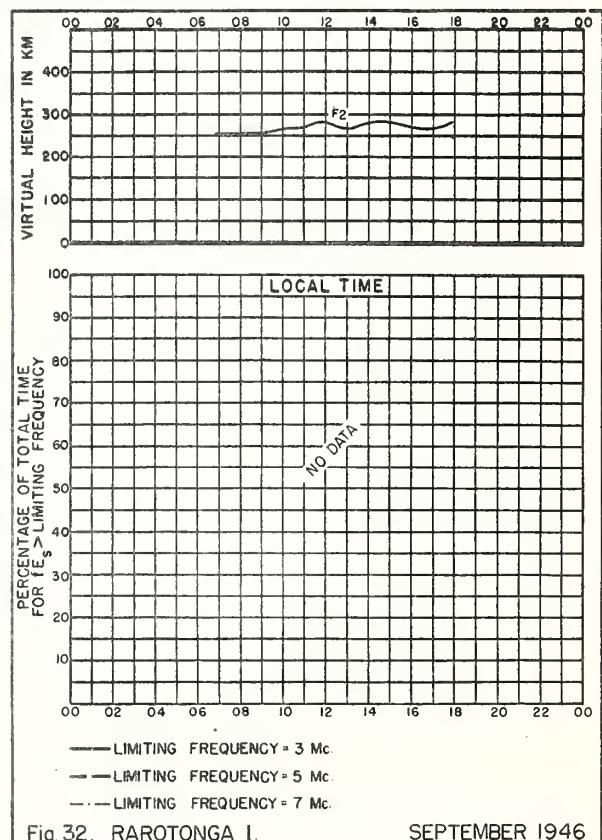


Fig. 32. RAROTONGA I.

SEPTEMBER 1946

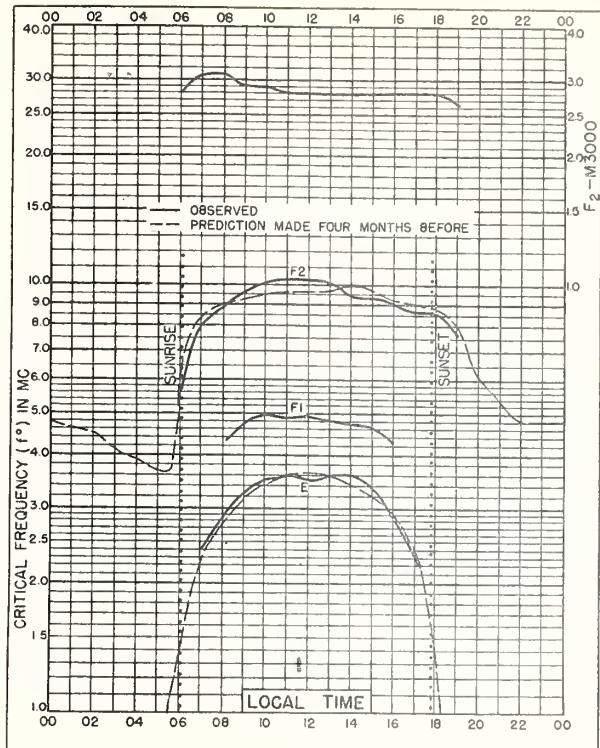


Fig. 33. KERMADEC IS.  
29.3°S, 177.9°

SEPTEMBER 1946

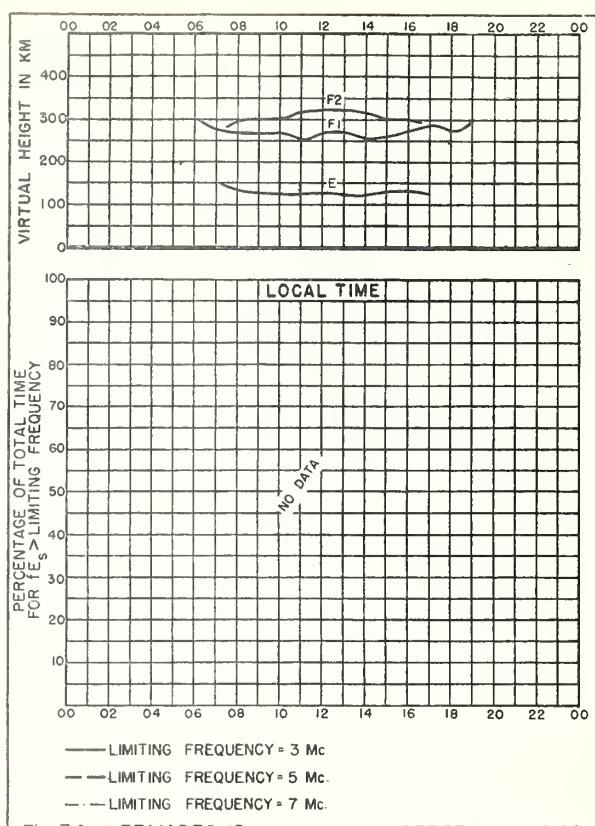


Fig. 34. KERMADEC IS.

SEPTEMBER 1946

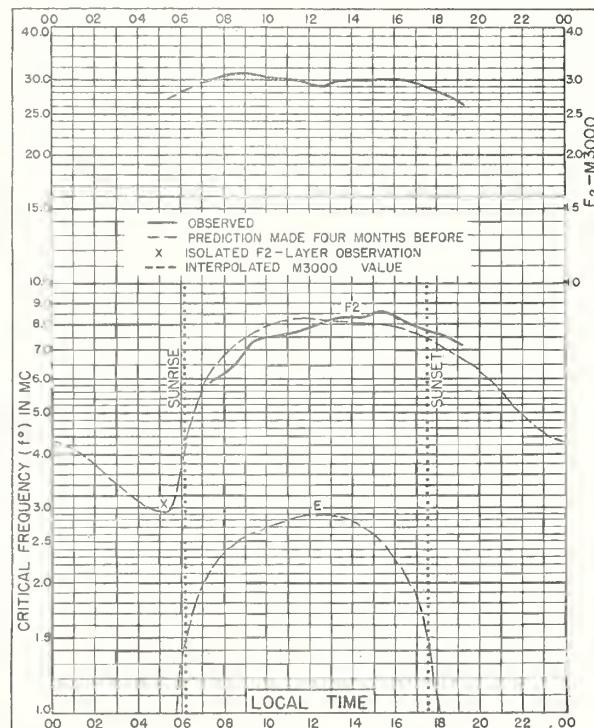
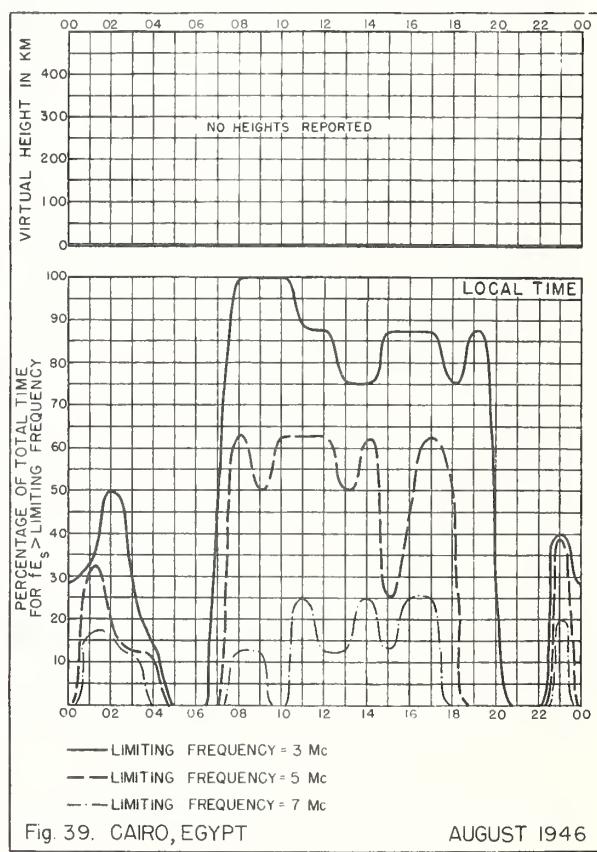
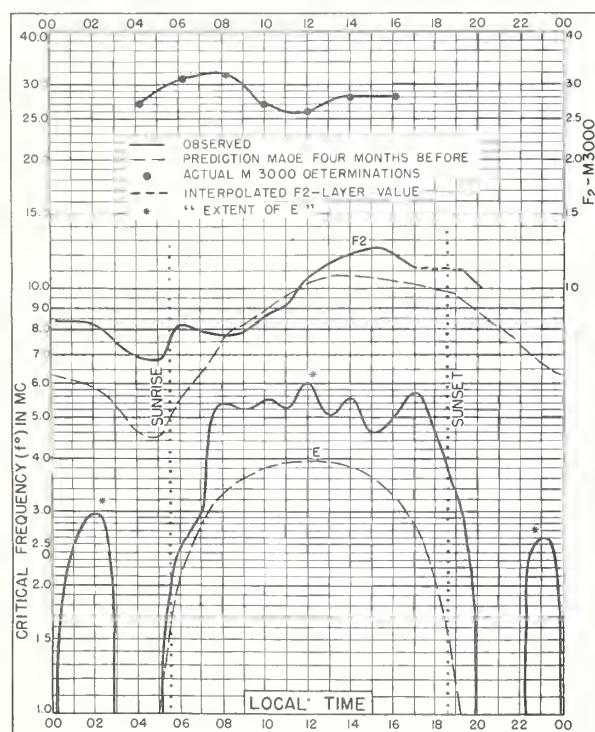
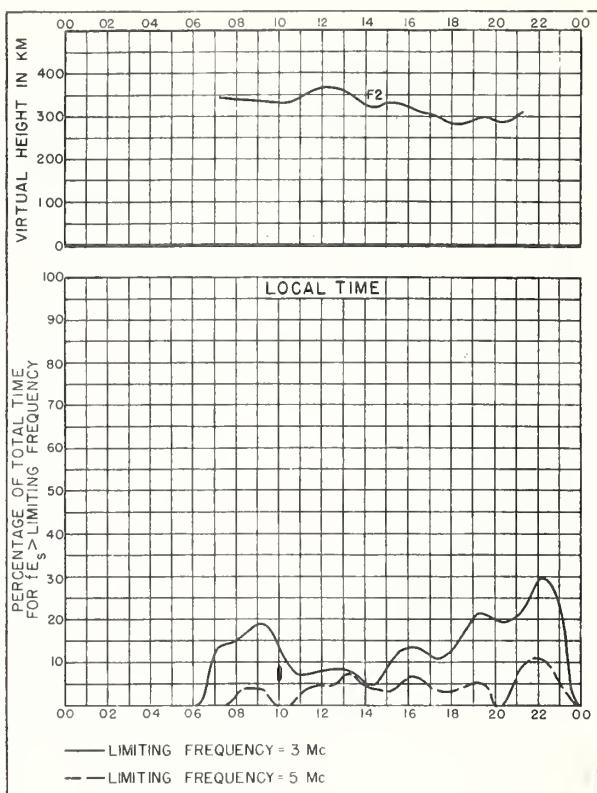
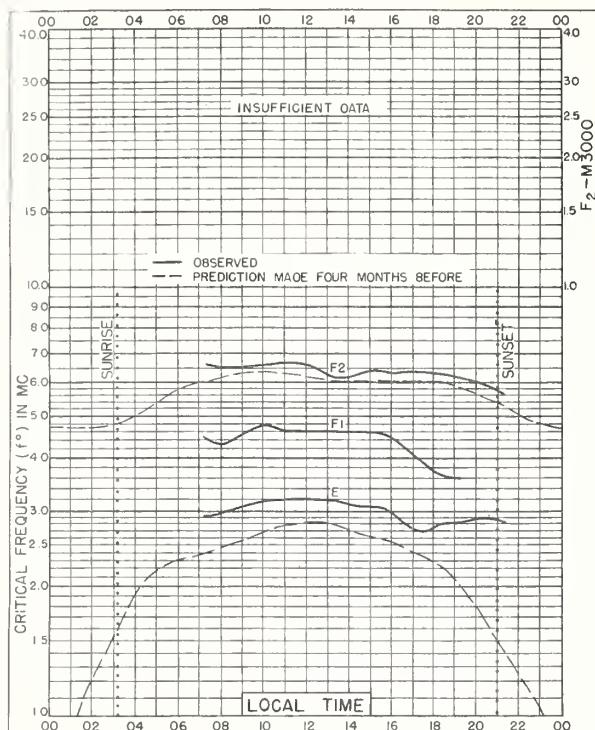


Fig. 35. CAMPBELL I.

52.5°S, 169.2°E

SEPTEMBER 1946



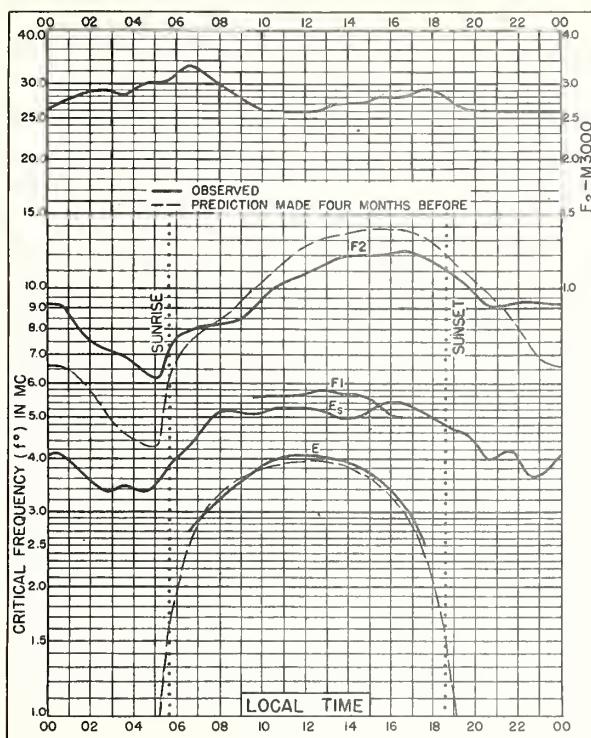


Fig. 40. OKINAWA I.

26.3°N, 127.8°E

AUGUST 1946

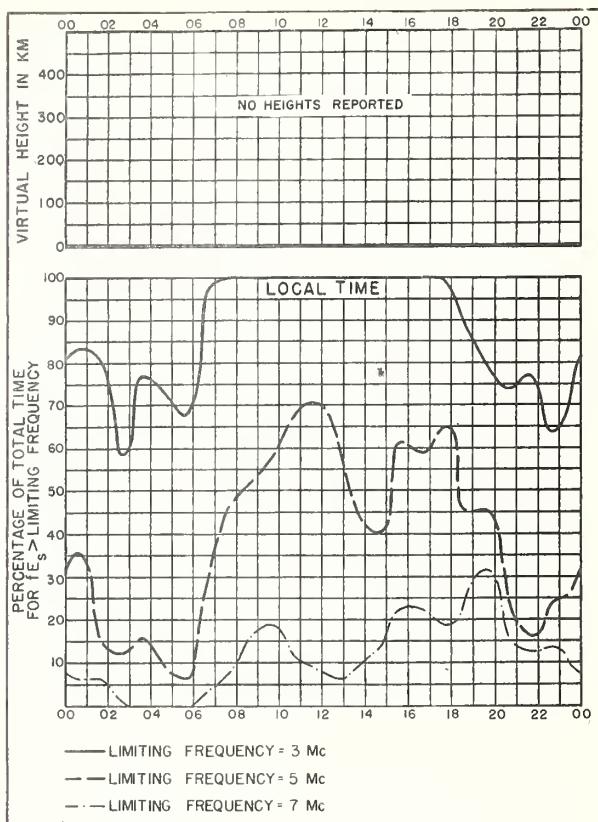


Fig. 41. OKINAWA I.

AUGUST 1946

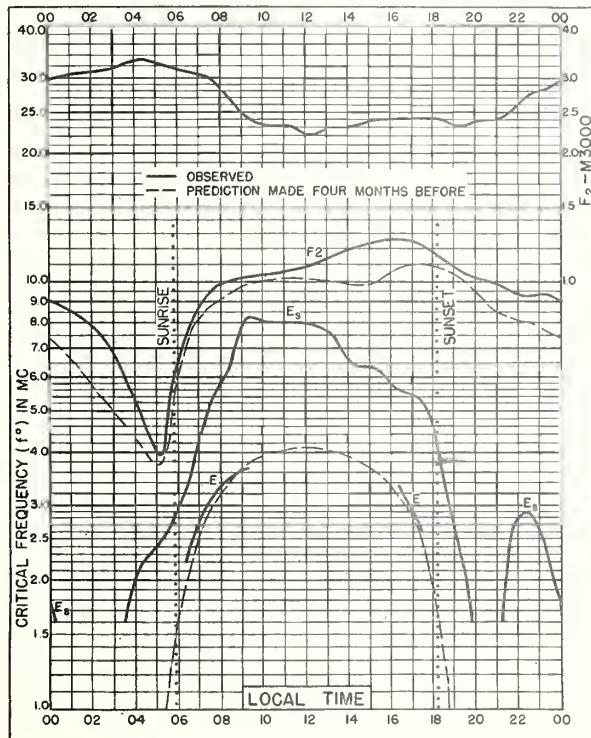


Fig. 42. LEYTE, PHILIPPINE IS.

11.0°N, 125.0°E

AUGUST 1946

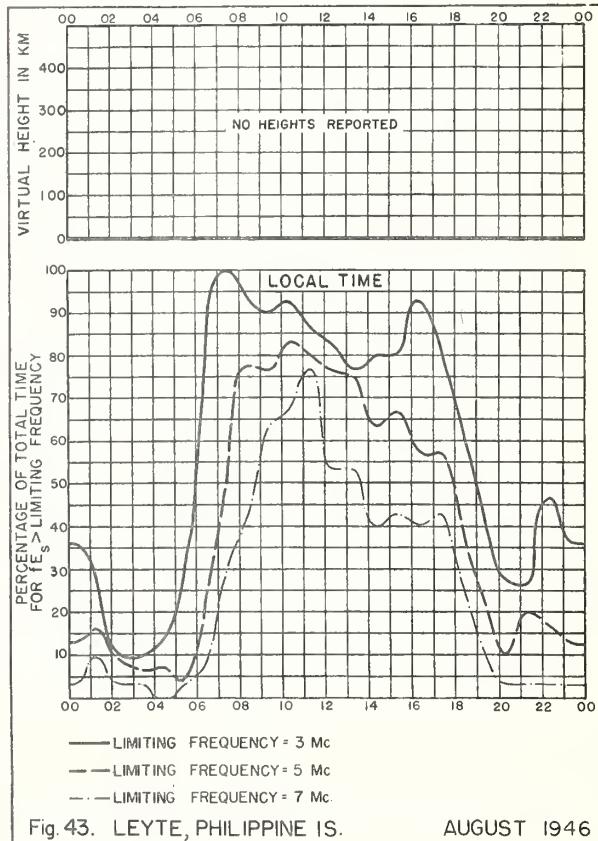


Fig. 43. LEYTE, PHILIPPINE IS.

AUGUST 1946

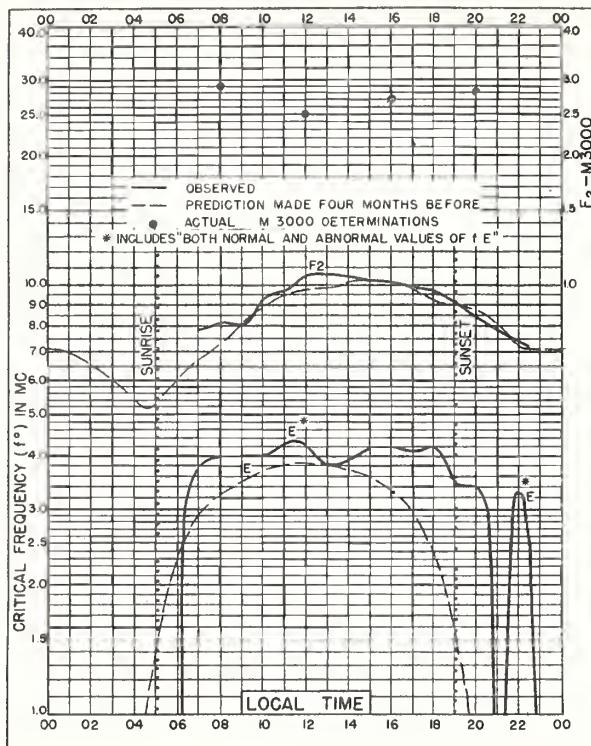


Fig. 44. PESHAWAR, INDIA  
34°N, 71.5°E JULY 1946

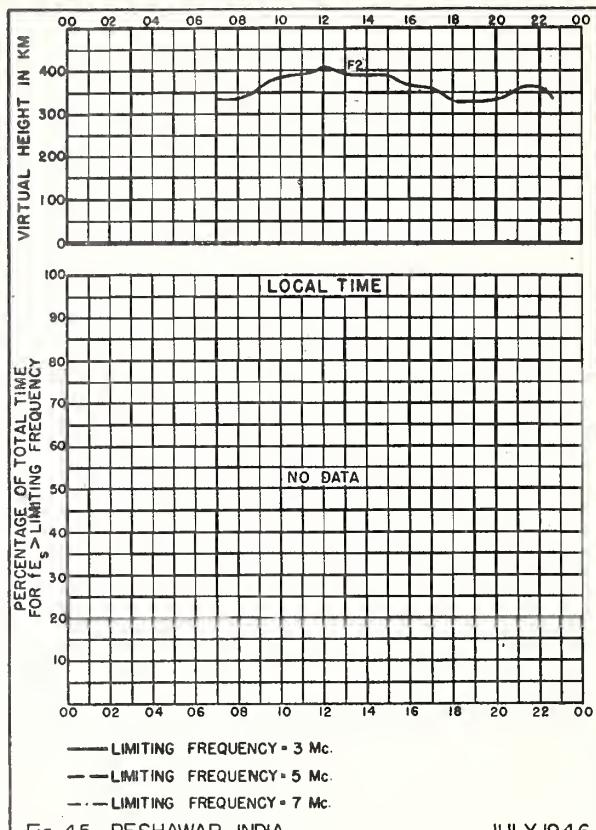


Fig. 45. PESHAWAR, INDIA JULY 1946

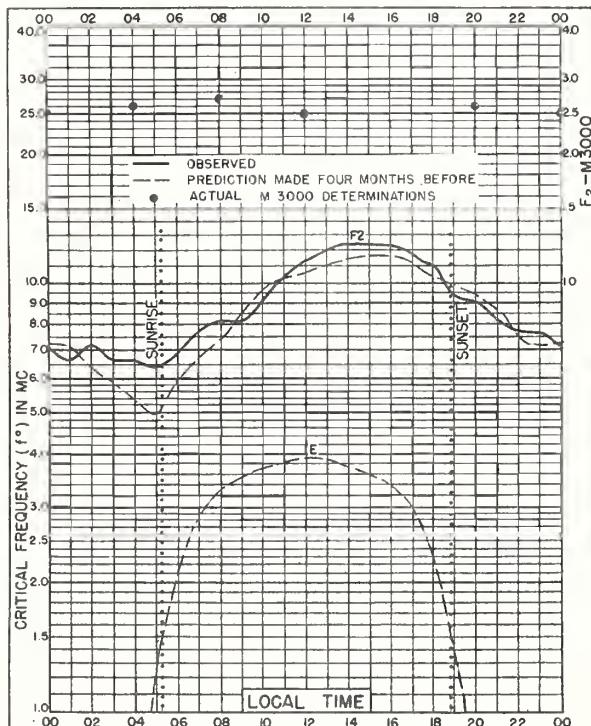


Fig. 46. DELHI, INDIA  
28.6°N, 77.1°E JULY 1946

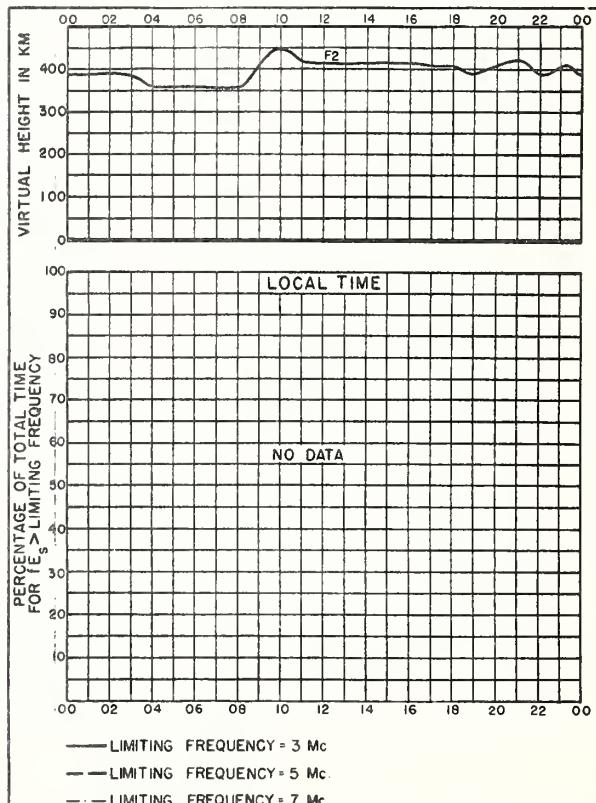
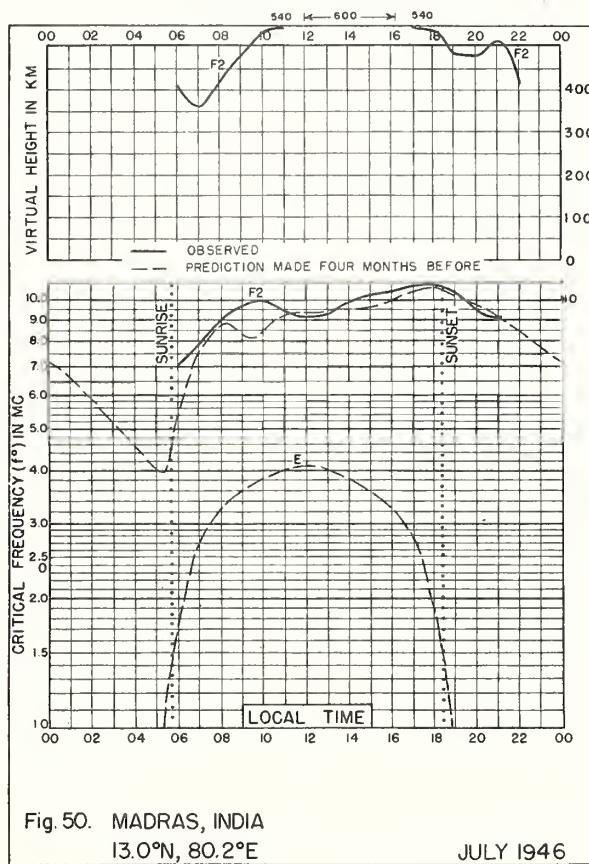
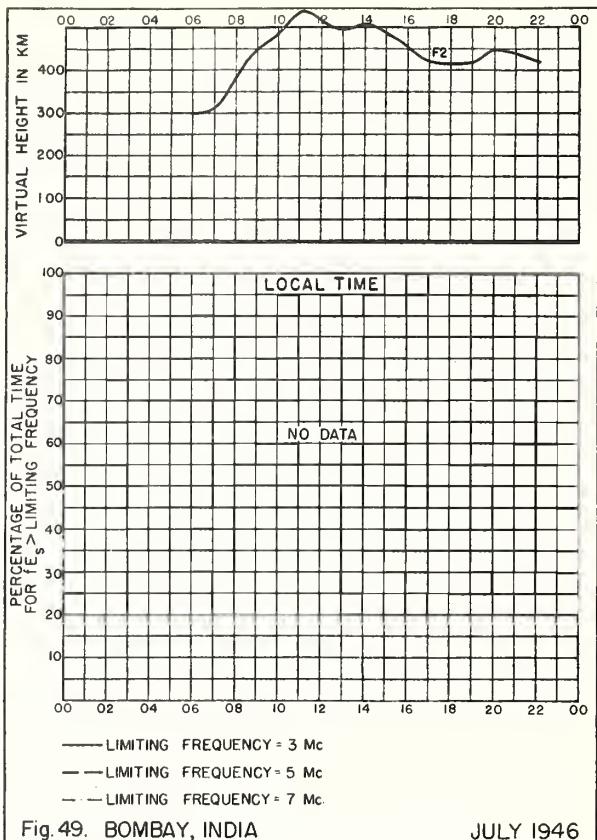
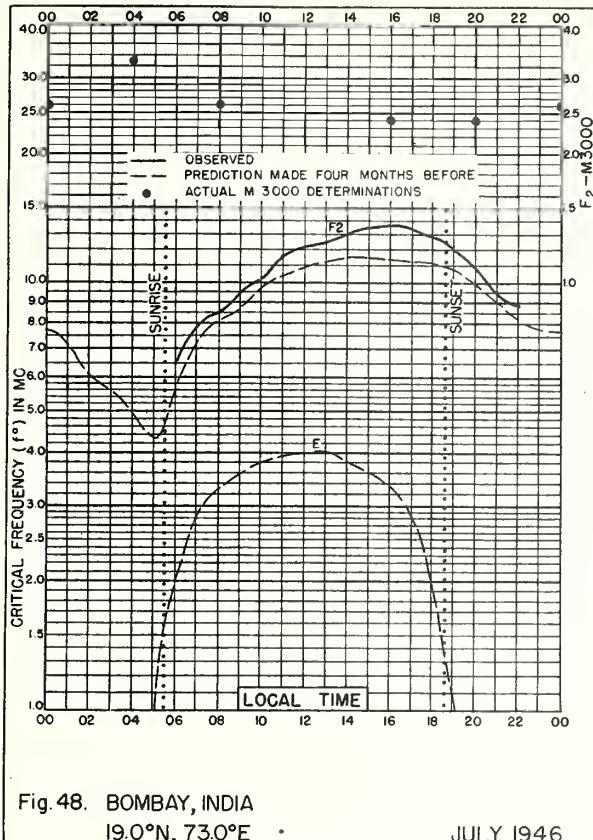


Fig. 47. DELHI, INDIA JULY 1946



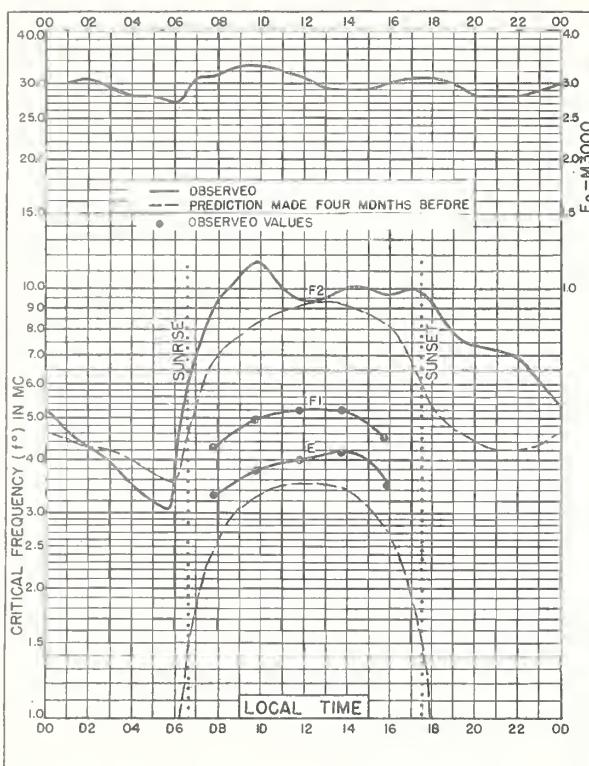


Fig. 51. RAROTONGA I.  
21.3°S, 159.8°W JULY 1946

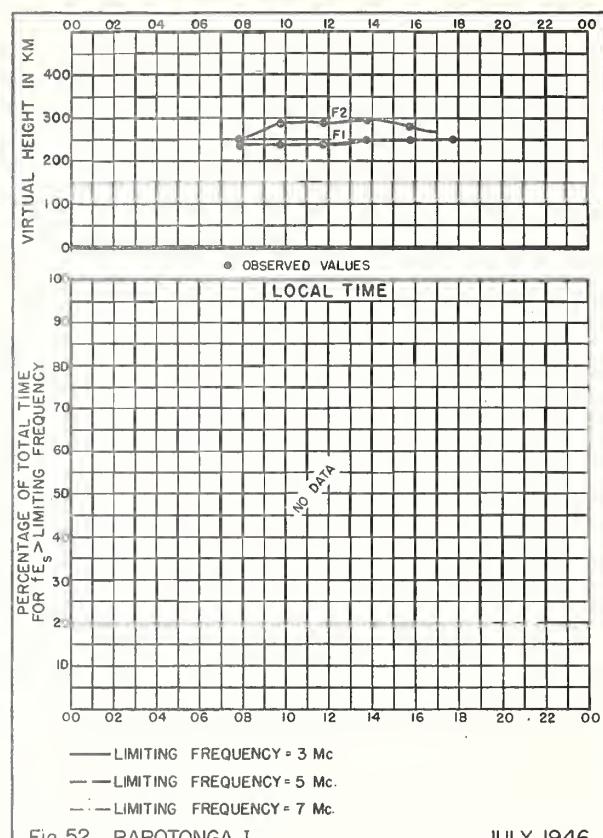


Fig. 52. RAROTONGA I. JULY 1946

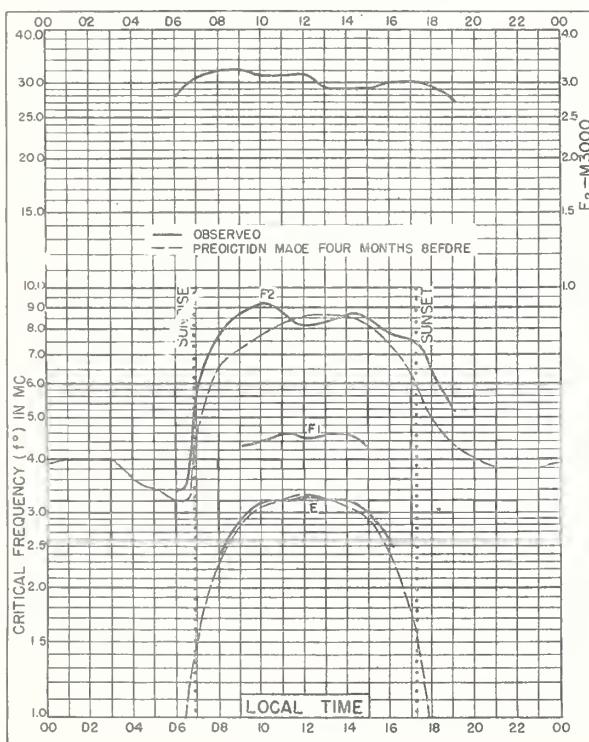


Fig. 53. KERMADEC IS.  
29.3°S, 177.9°W JULY 1946

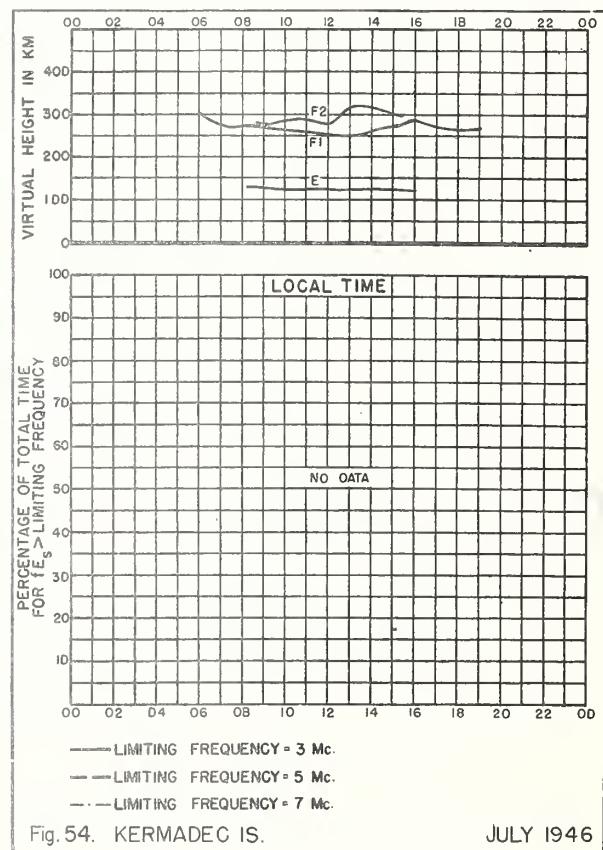


Fig. 54. KERMADEC IS. JULY 1946

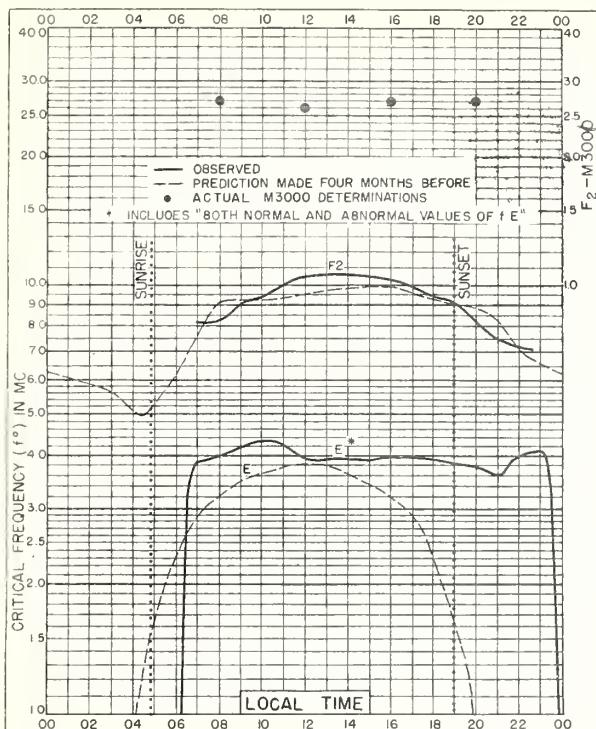


Fig. 55. PESHAWAR, INDIA  
34.0°N, 71.5°E

JUNE 1946

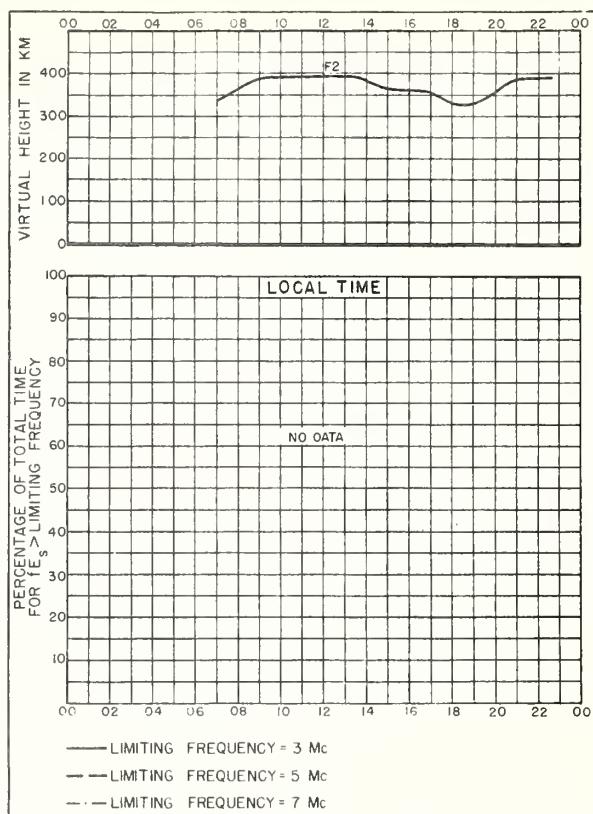


Fig. 56. PESHAWAR, INDIA

JUNE 1946

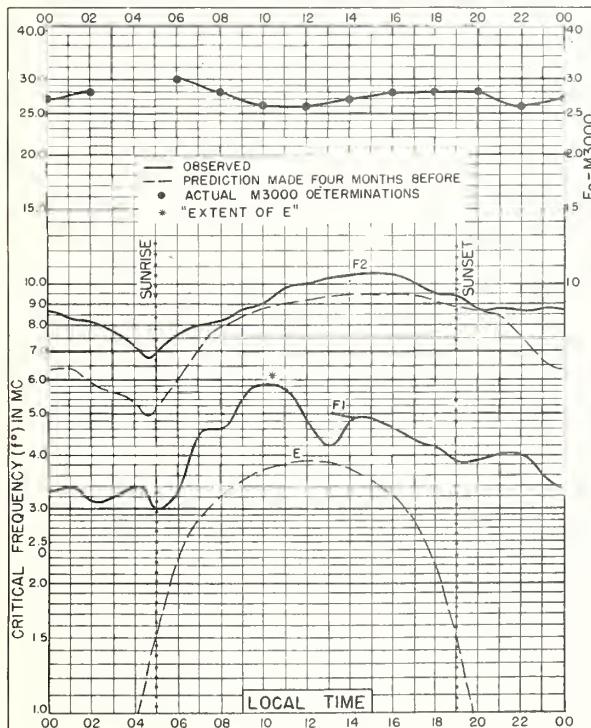


Fig. 57. CAIRO, EGYPT  
30.6°N, 31.9°E

JUNE 1946

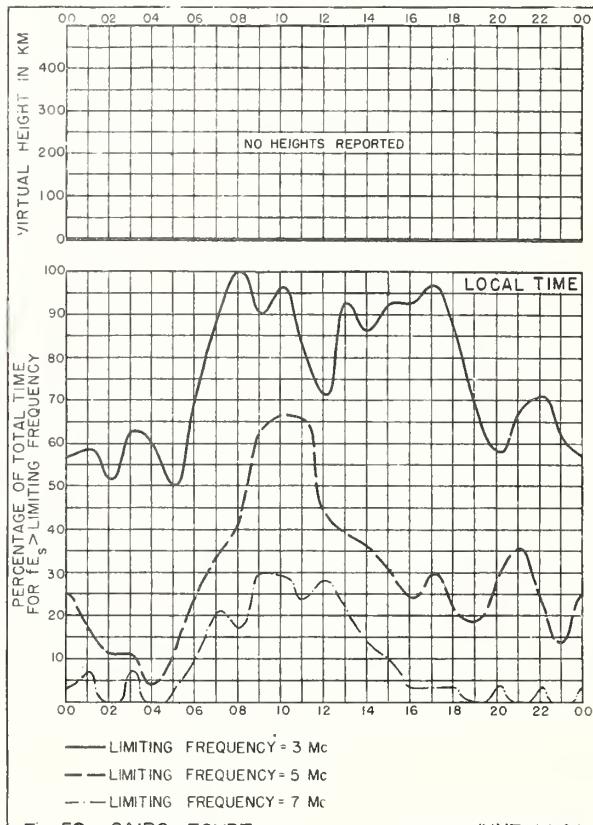


Fig. 58. CAIRO, EGYPT

JUNE 1946

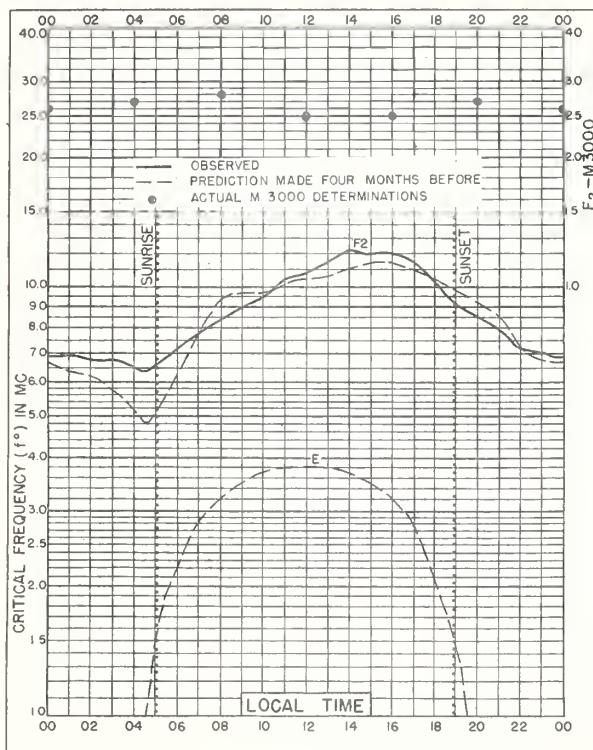


Fig. 59. DELHI, INDIA

28.6°N, 77.1°E

JUNE 1946

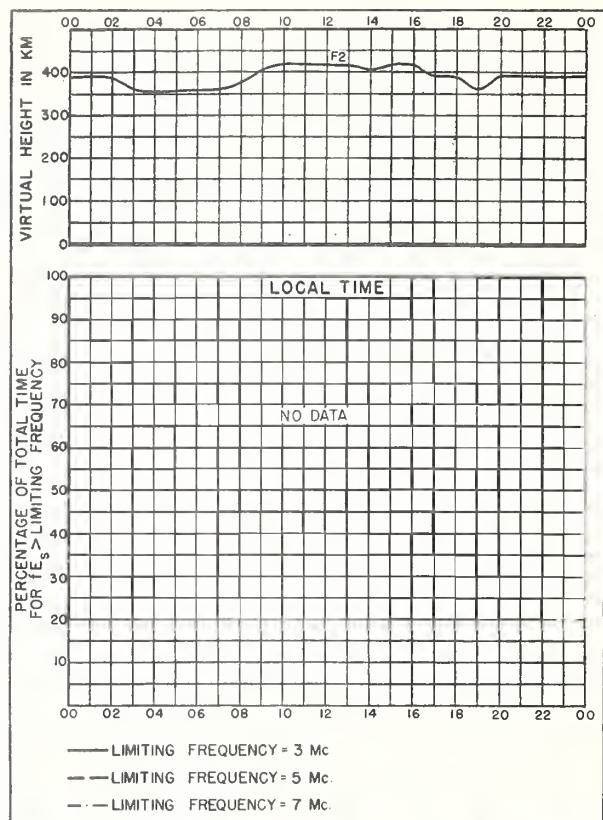


Fig. 60. DELHI, INDIA

JUNE 1946

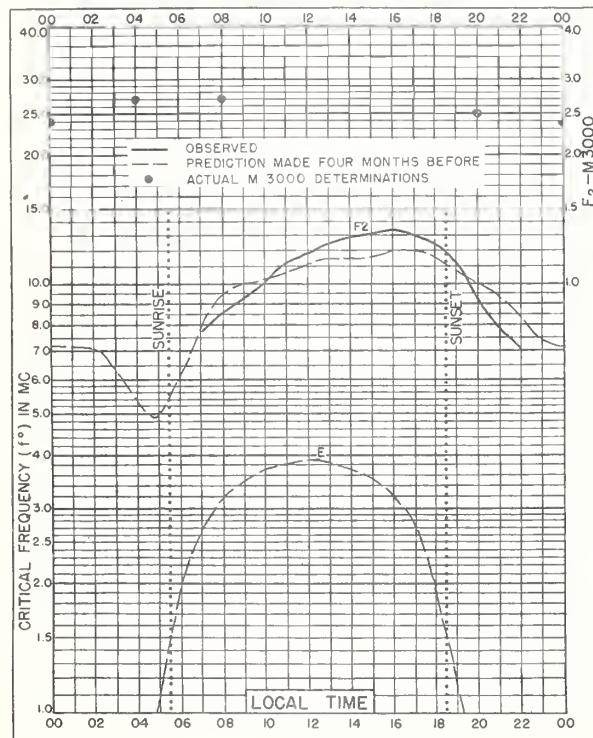


Fig. 61. BOMBAY, INDIA

19.0°N, 73.0°E

JUNE 1946

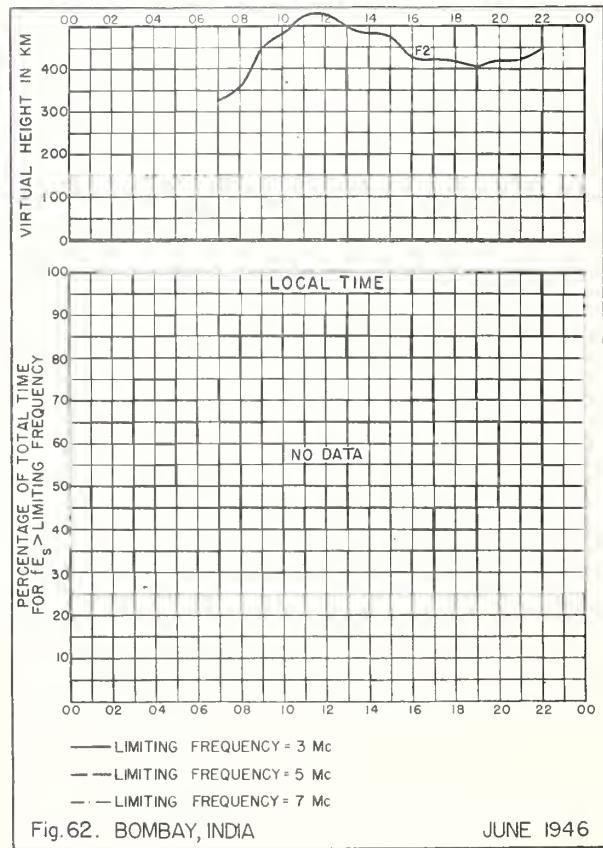
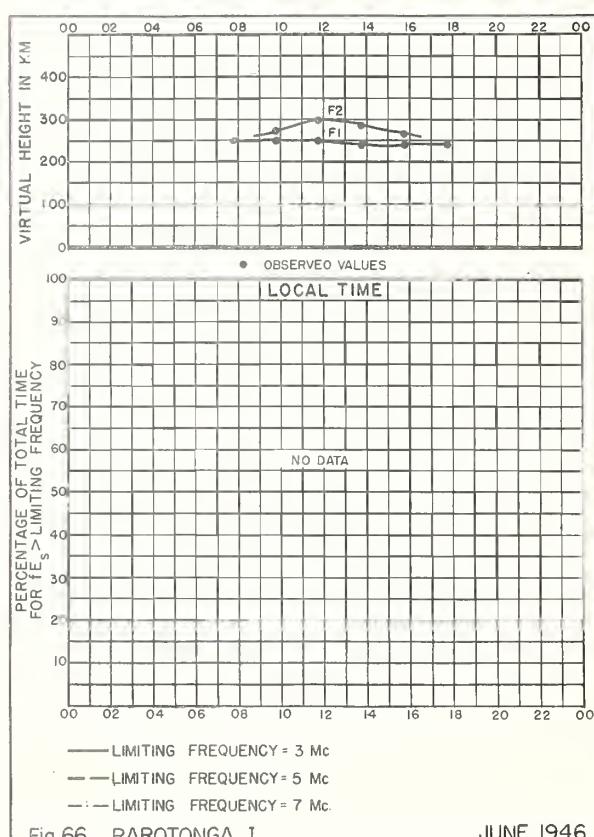
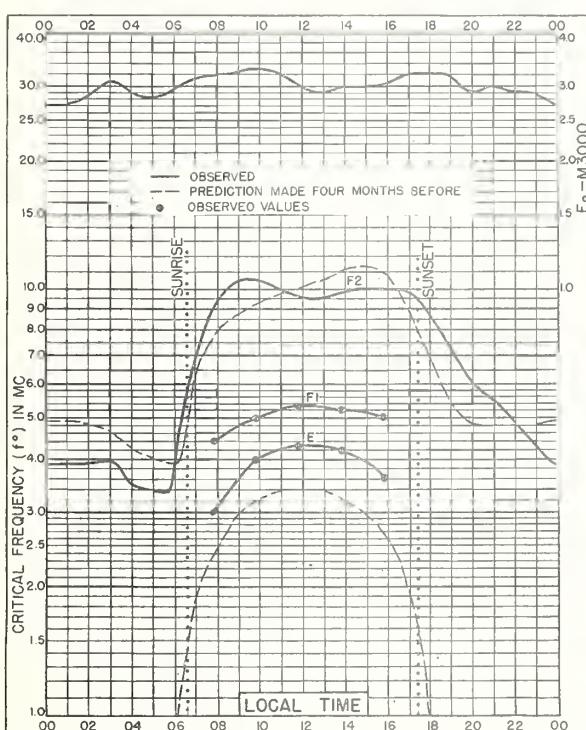
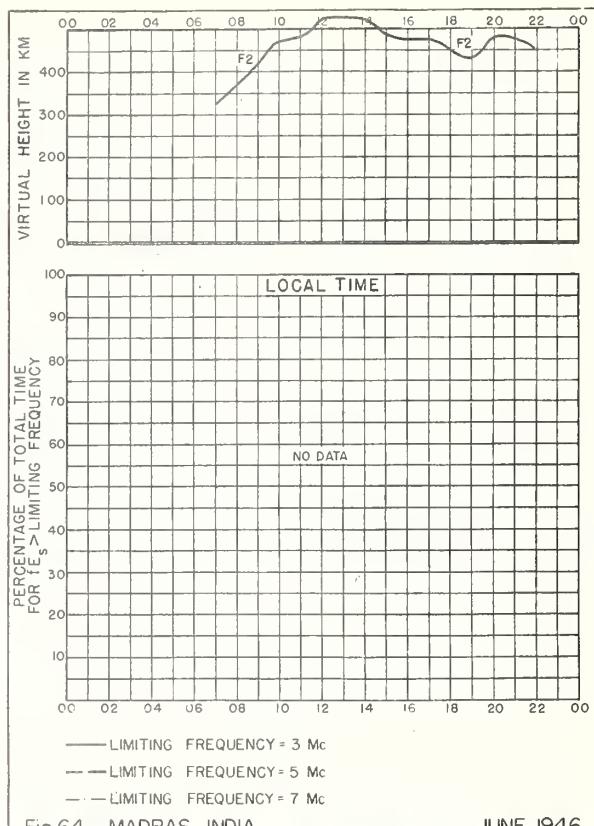
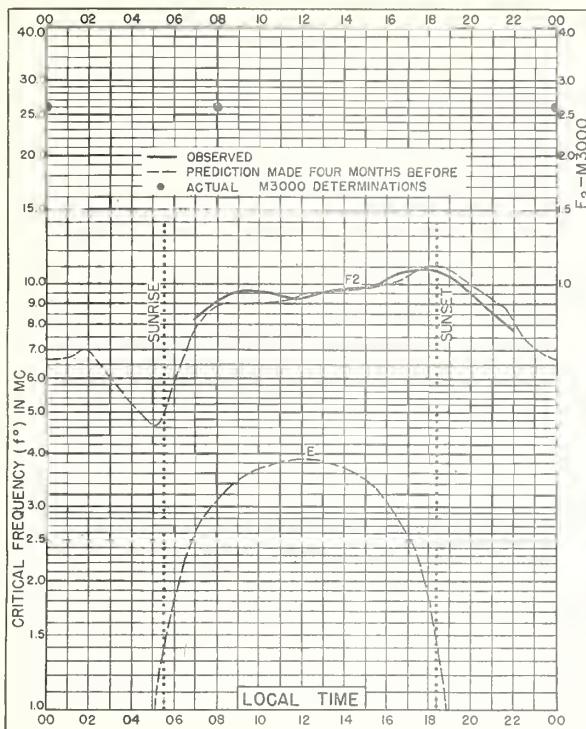
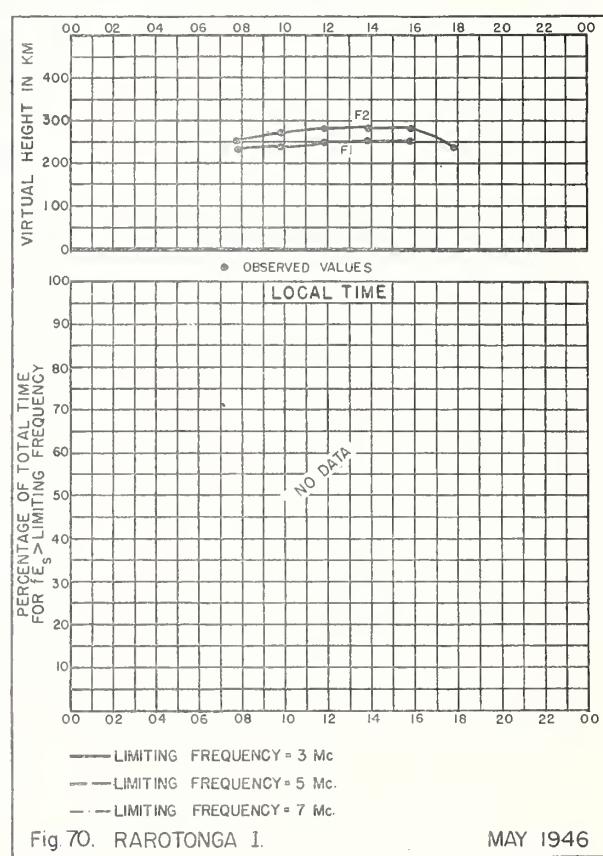
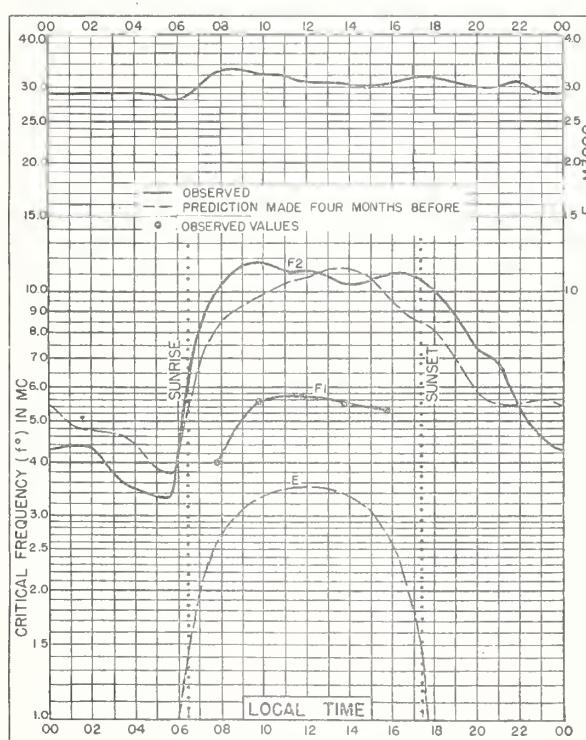
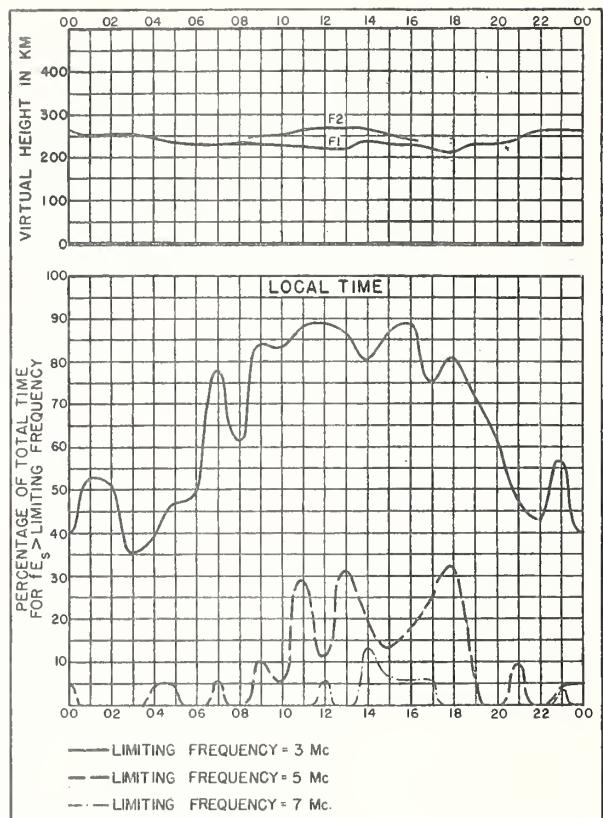
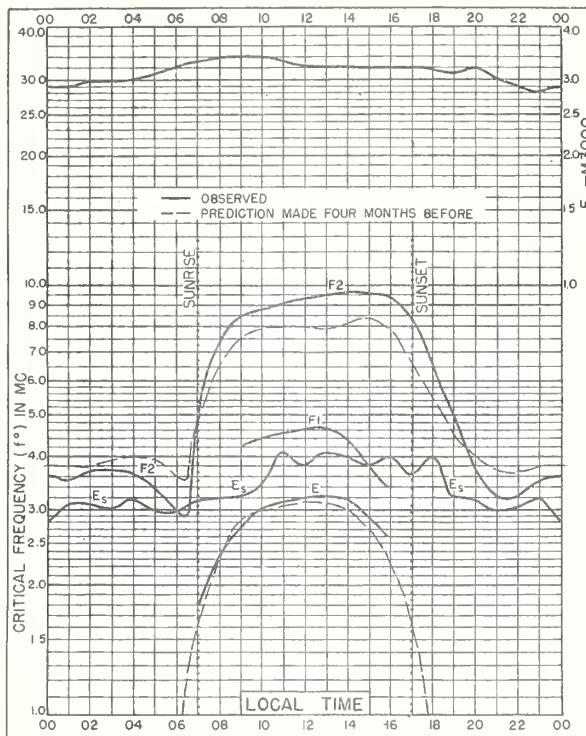
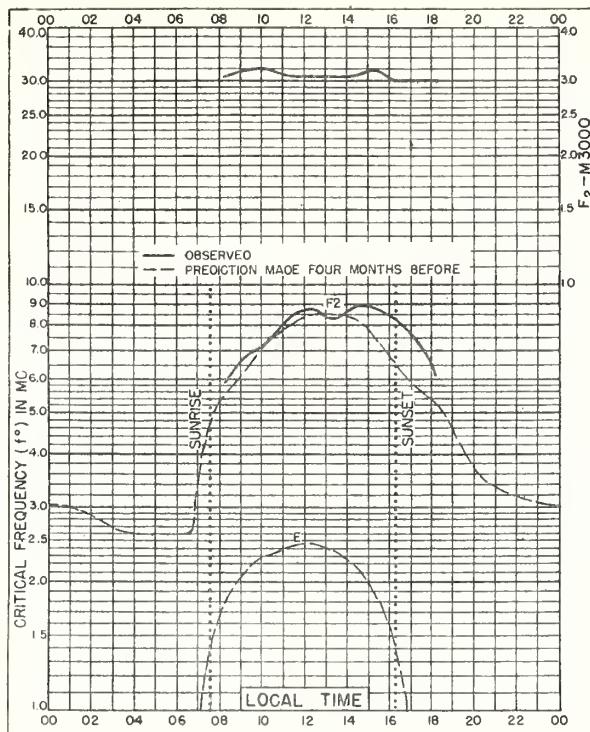


Fig. 62. BOMBAY, INDIA

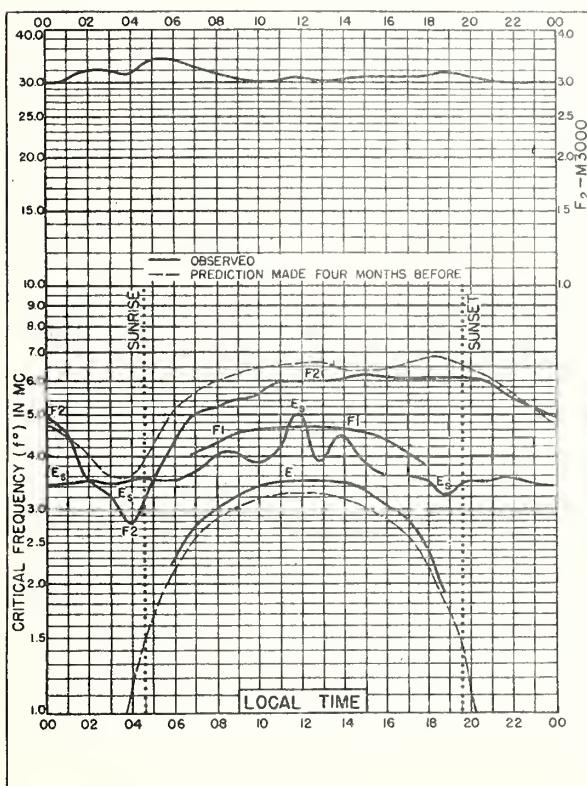
JUNE 1946



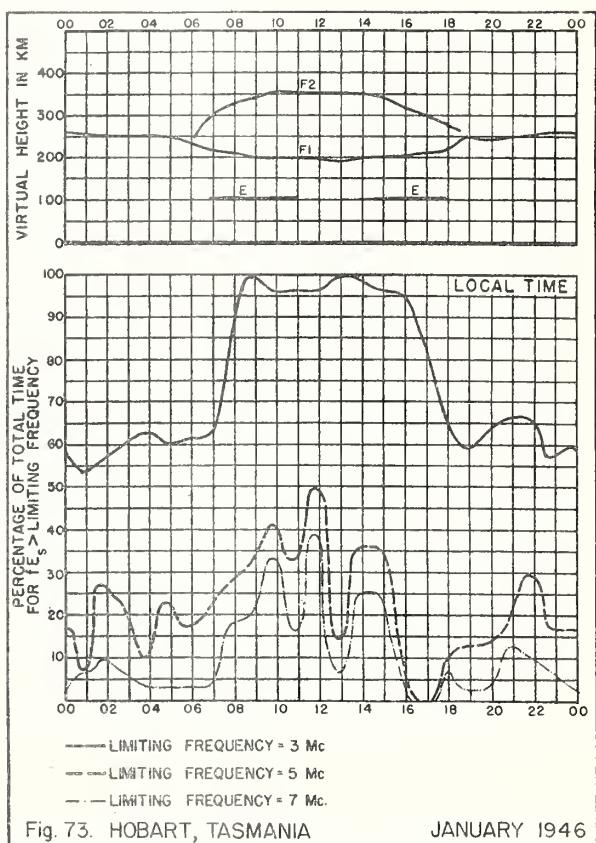




MAY 1946



JANUARY 1946



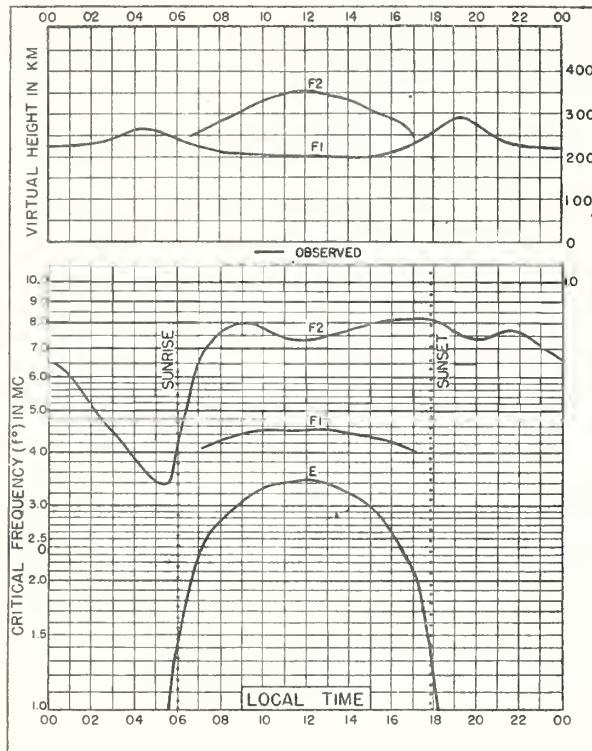


Fig. 74. HUANCAYO, PERU  
12.0°S, 75.3°W SEPTEMBER 1943

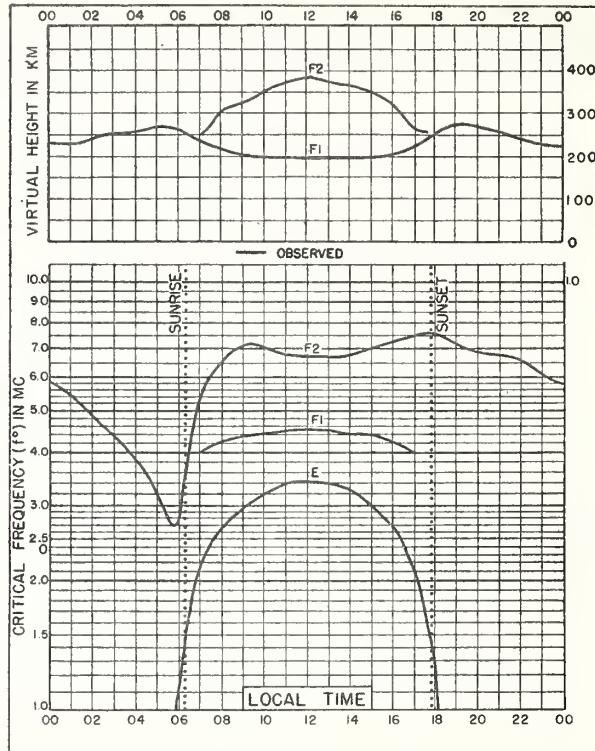


Fig. 75. HUANCAYO, PERU  
12.0°S, 75.3°W AUGUST 1943

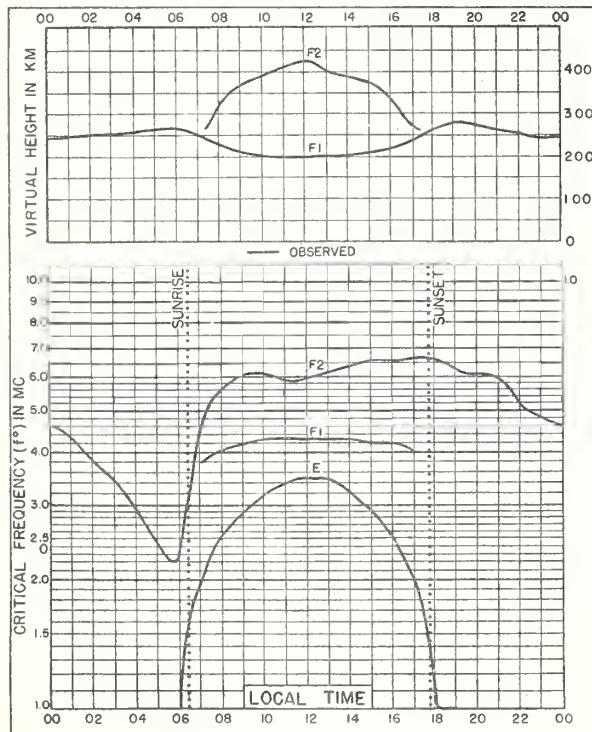


Fig. 76. HUANCAYO, PERU  
12.0°S, 75.3°W JULY 1943

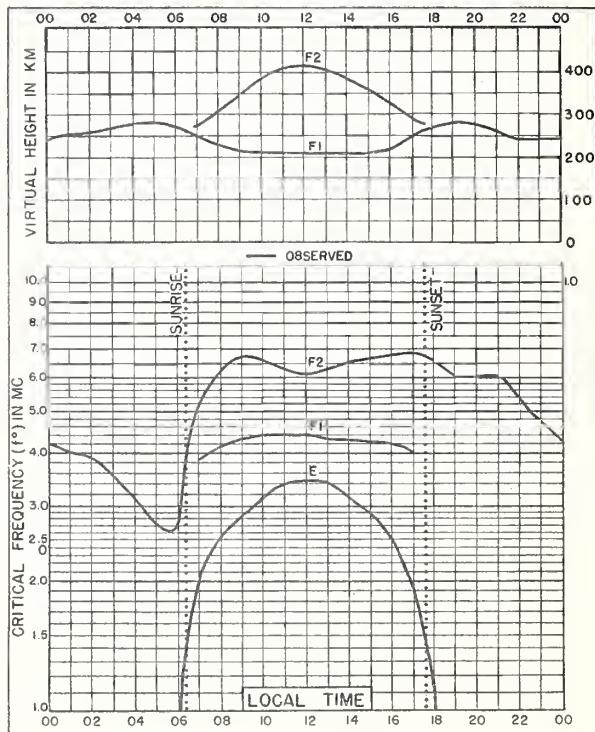
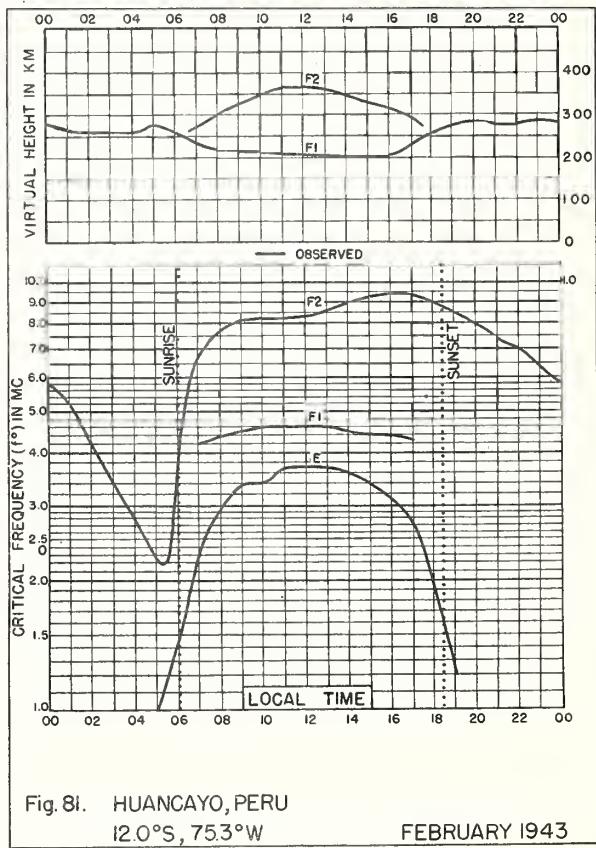
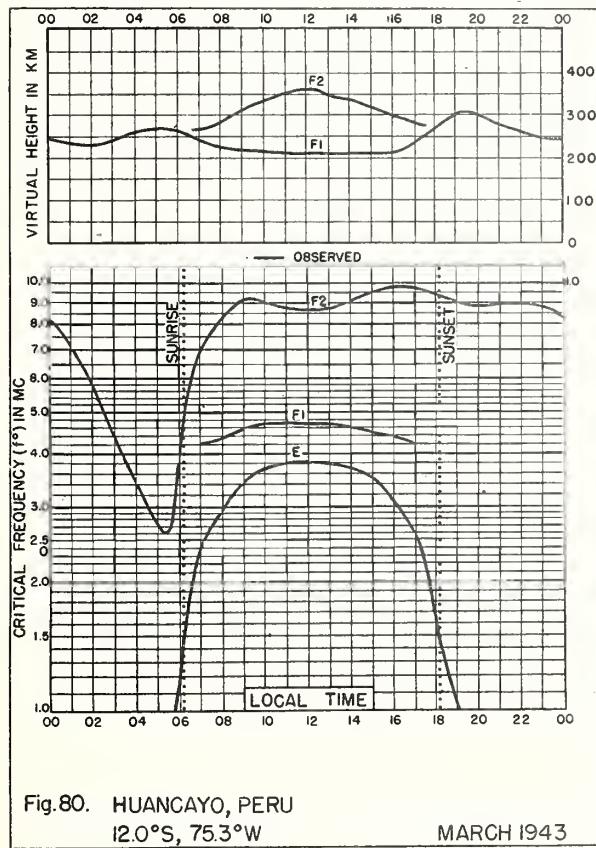
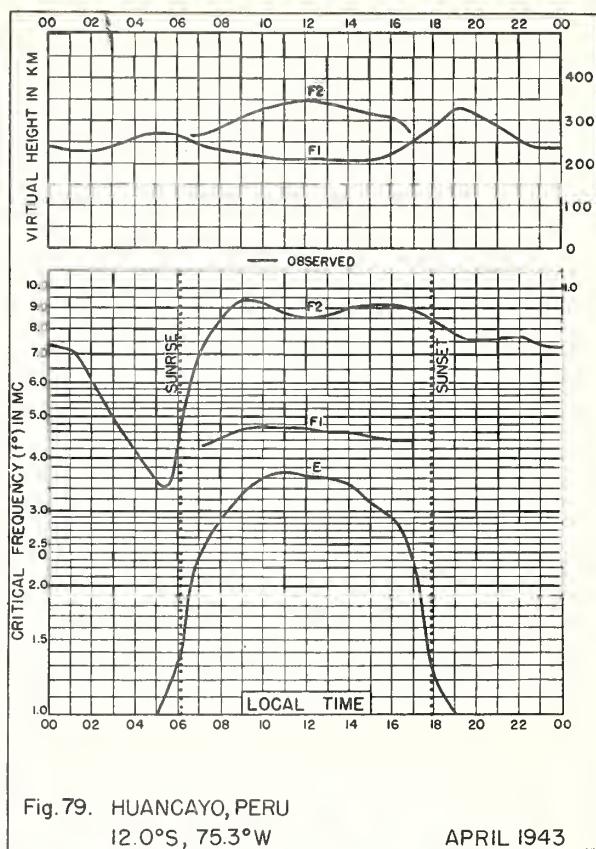
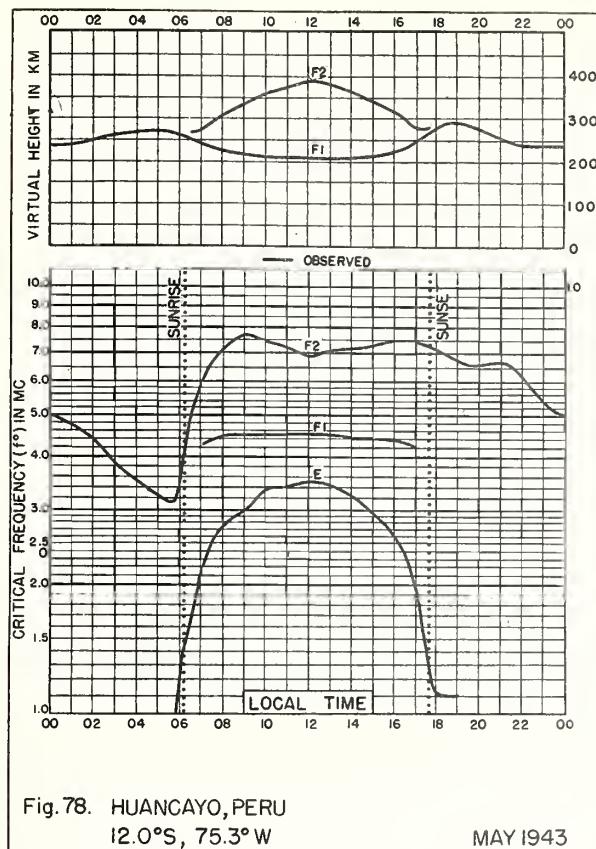


Fig. 77. HUANCAYO, PERU  
12.0°S, 75.3°W JUNE 1943



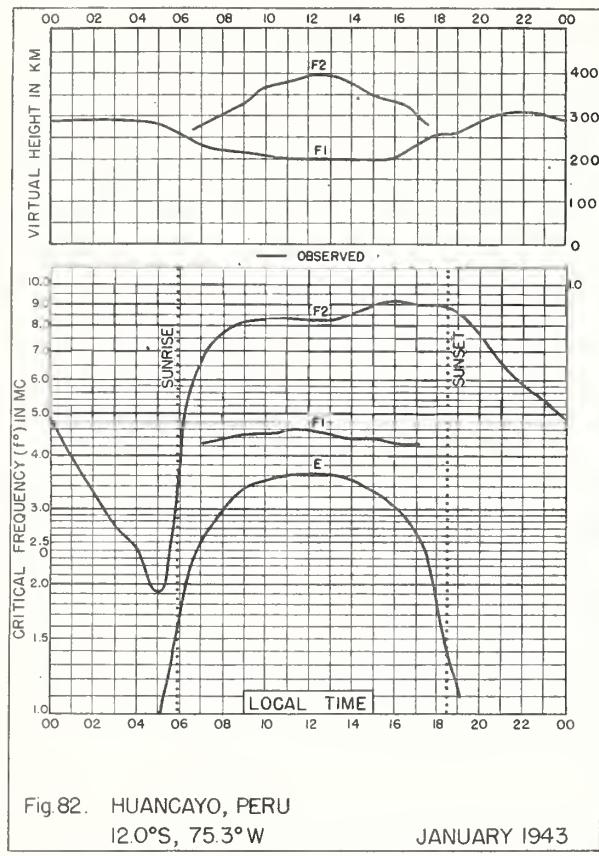


Fig. 82. HUANCAYO, PERU  
12.0°S, 75.3°W  
JANUARY 1943

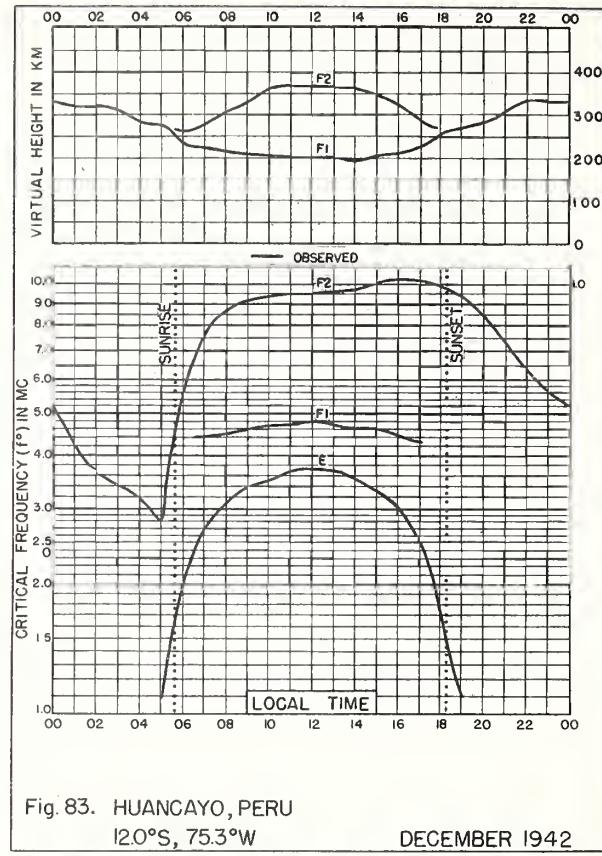


Fig. 83. HUANCAYO, PERU  
12.0°S, 75.3°W  
DECEMBER 1942

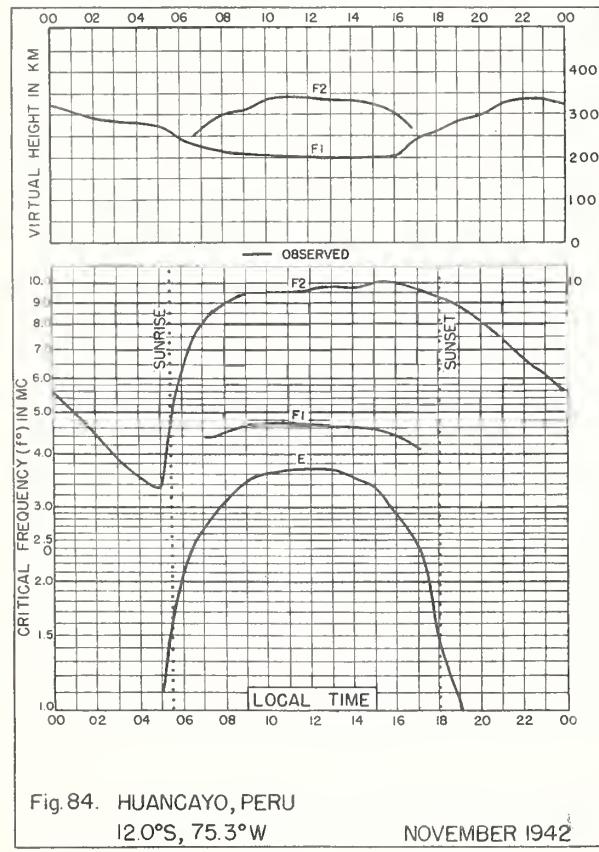


Fig. 84. HUANCAYO, PERU  
12.0°S, 75.3°W  
NOVEMBER 1942

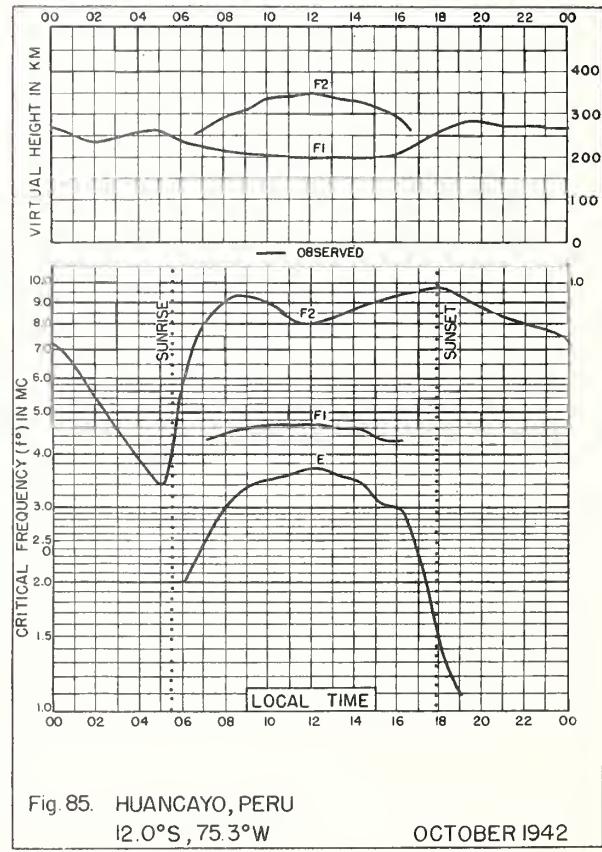
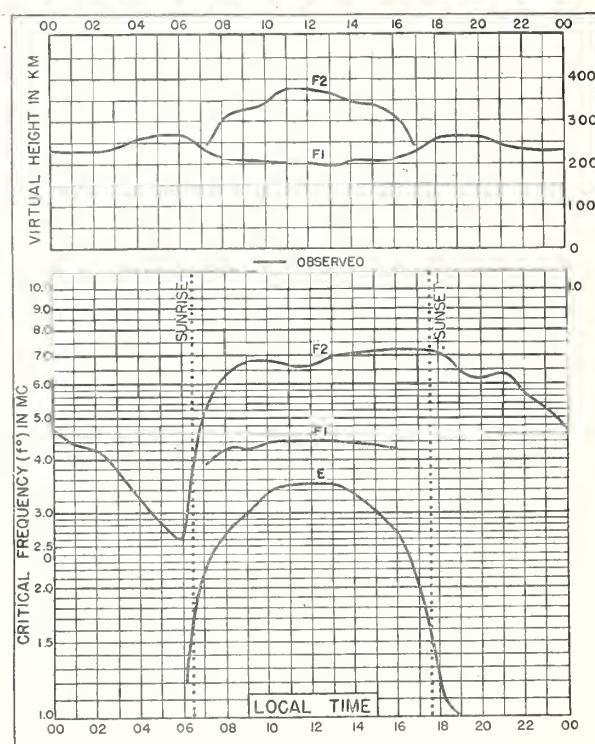
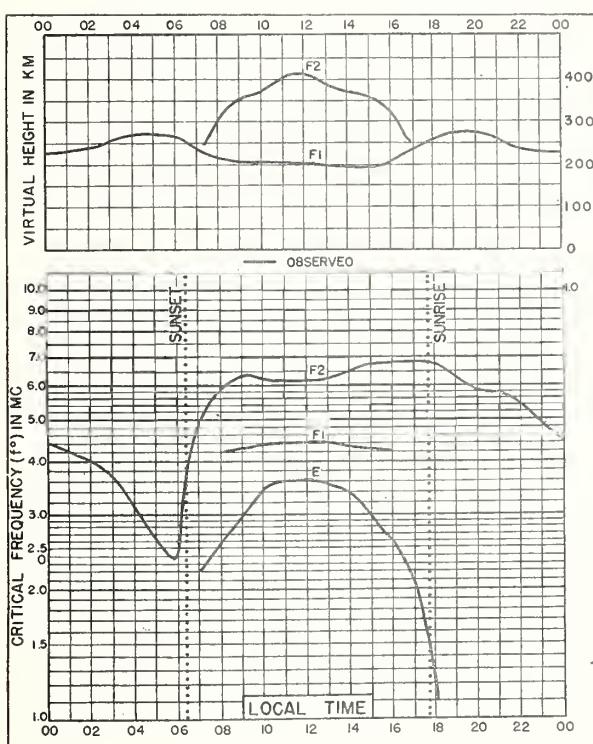
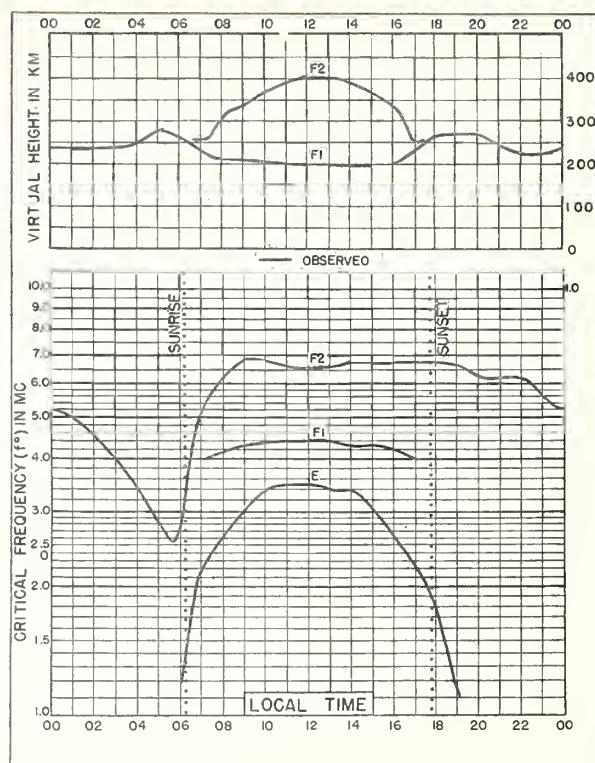
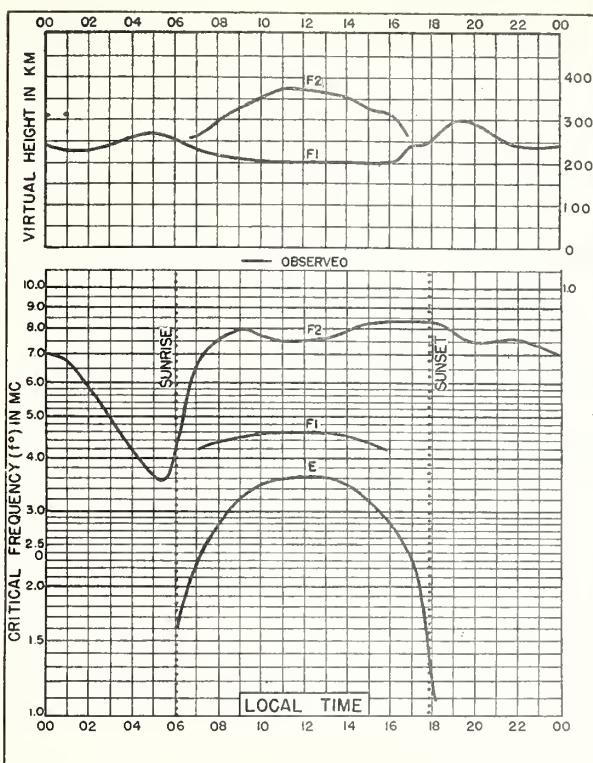
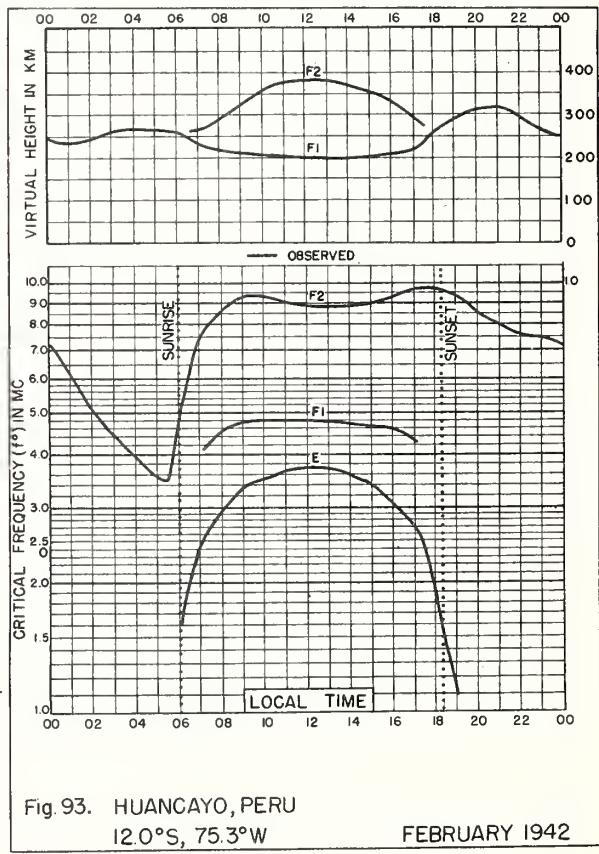
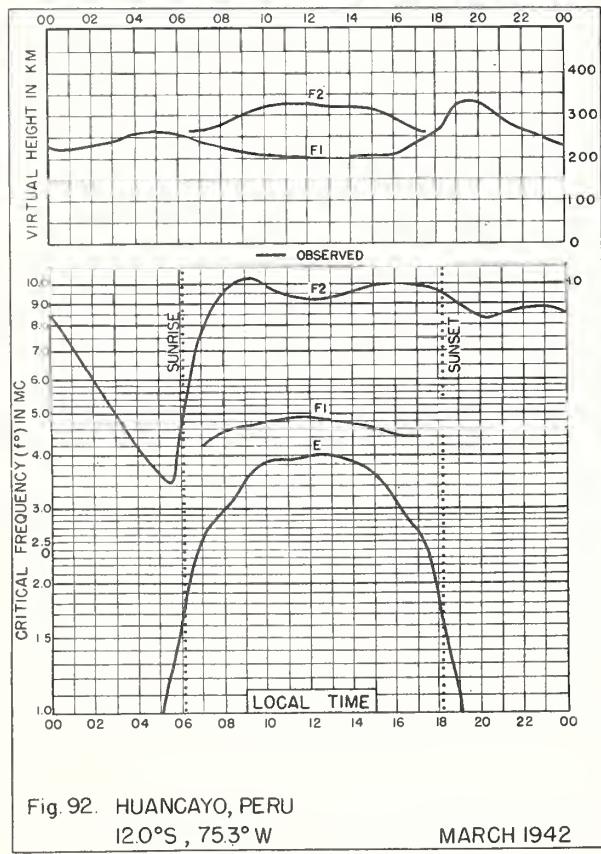
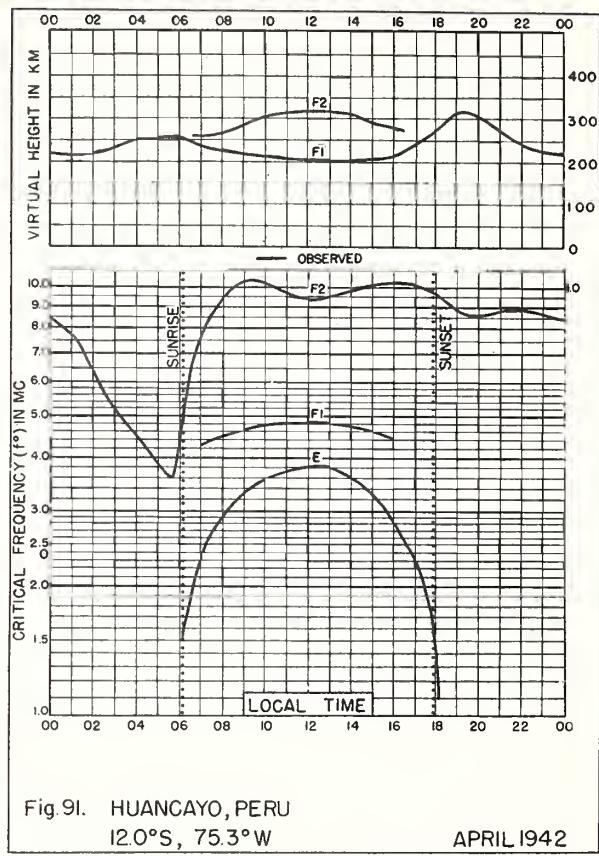
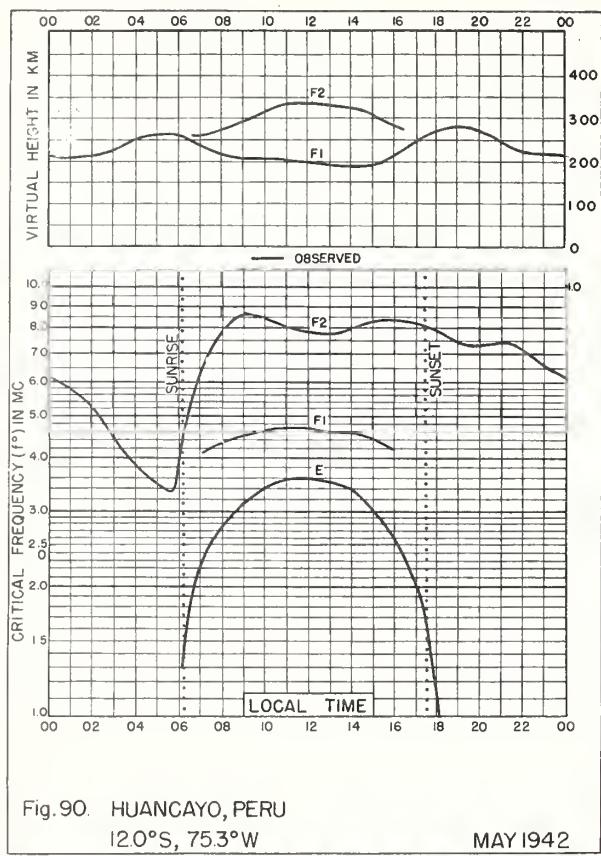
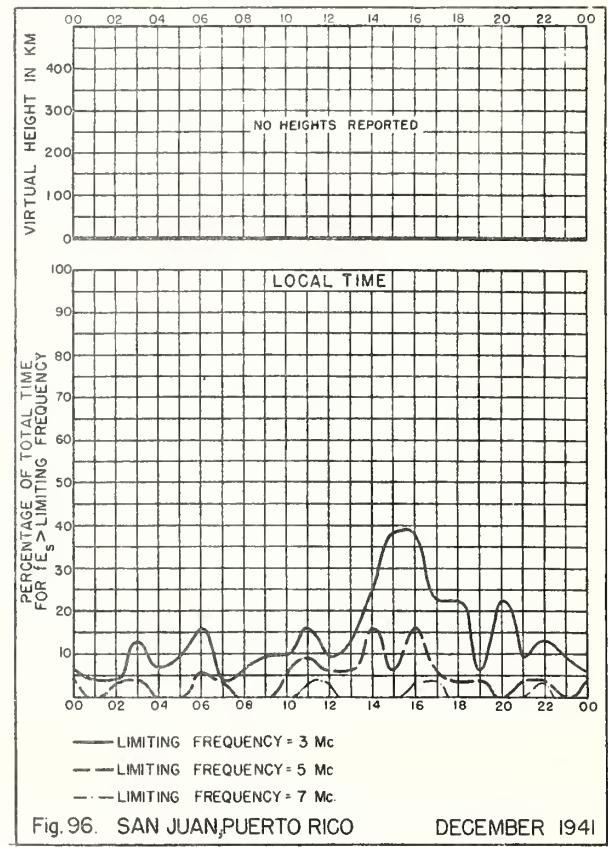
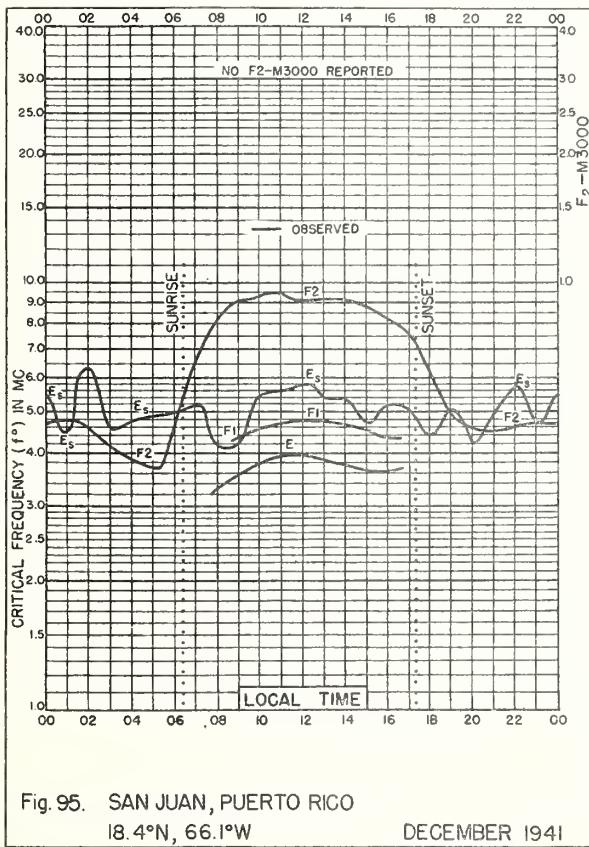
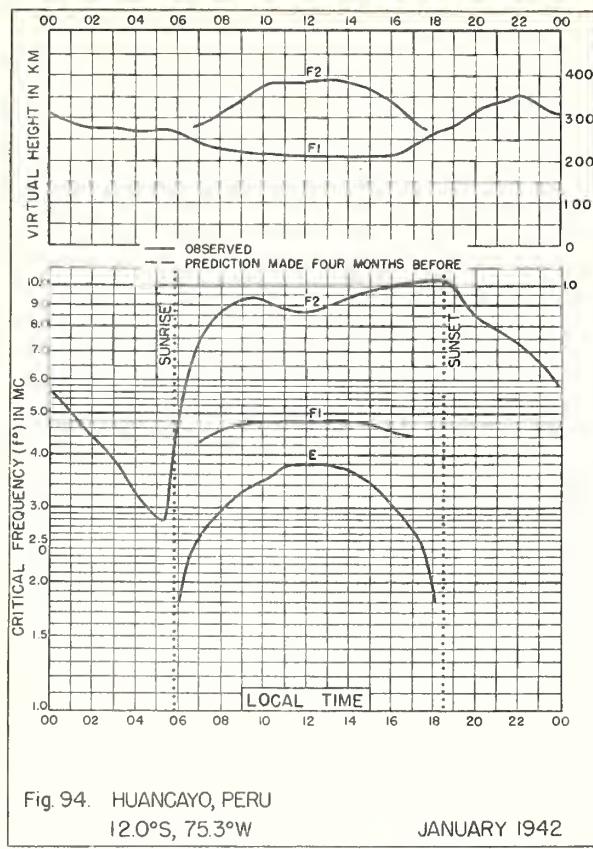
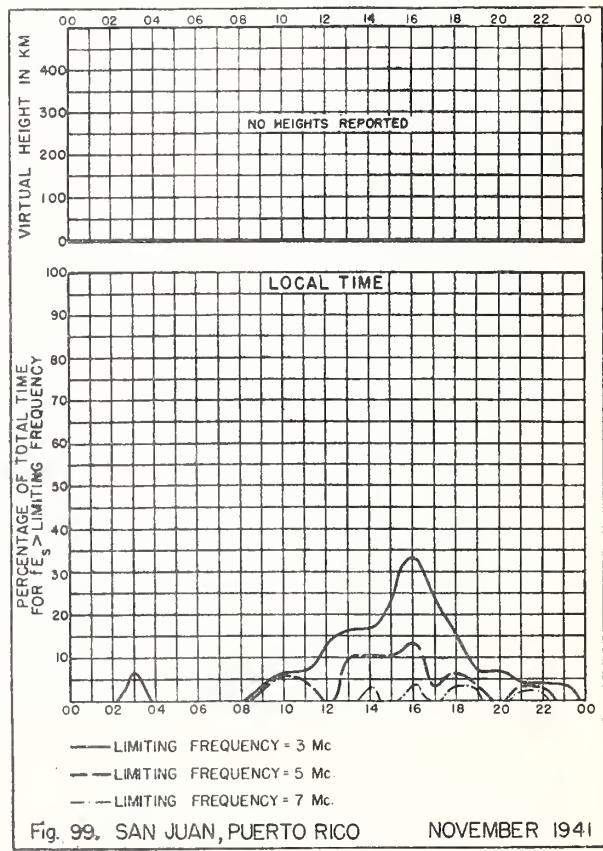
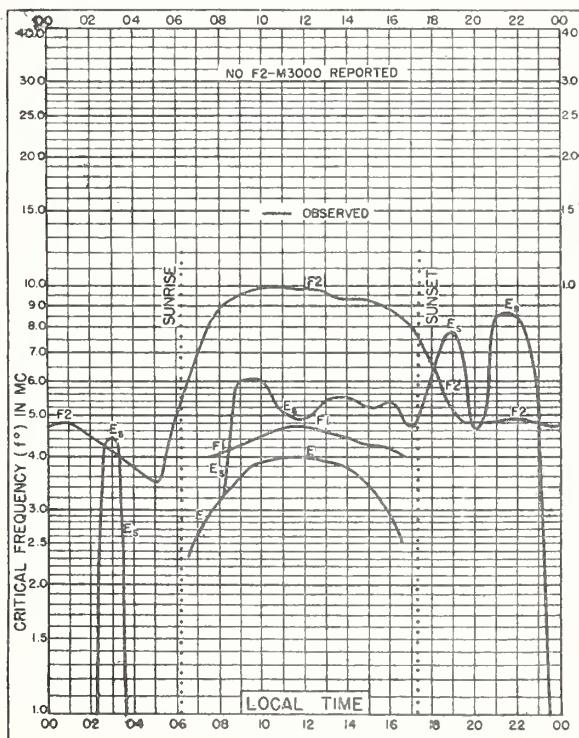
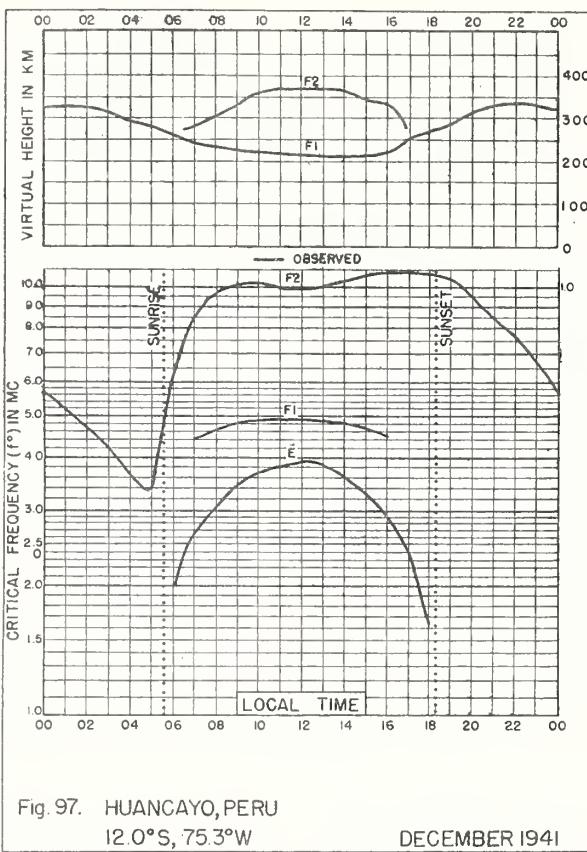


Fig. 85. HUANCAYO, PERU  
12.0°S, 75.3°W  
OCTOBER 1942









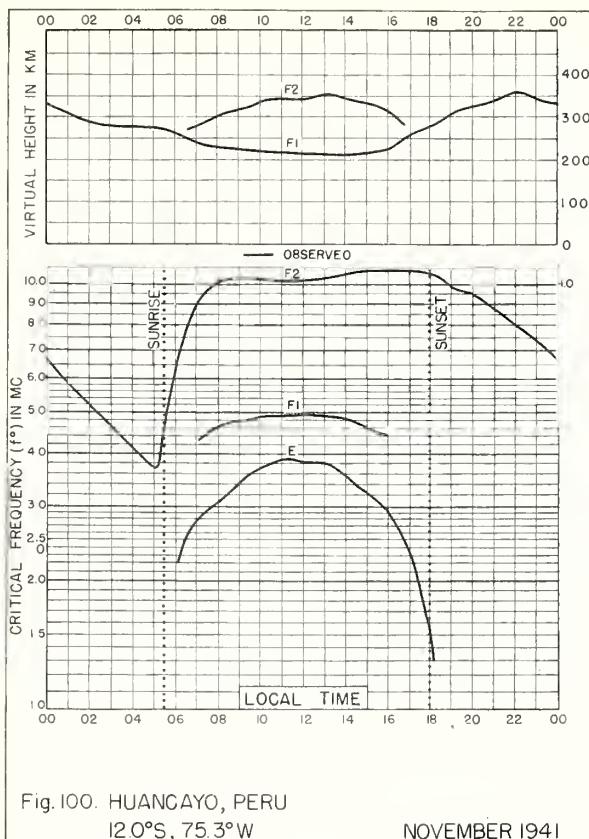


Fig. 100. HUANCAYO, PERU  
12°S, 75.3°W NOVEMBER 1941

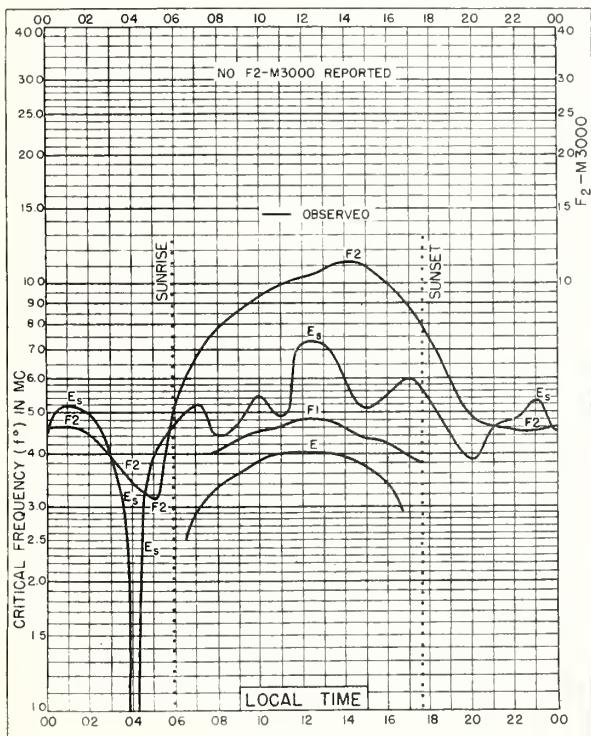


Fig 101 SAN JUAN, PUERTO RICO  
18.4°N, 66°W OCTOBER 1941

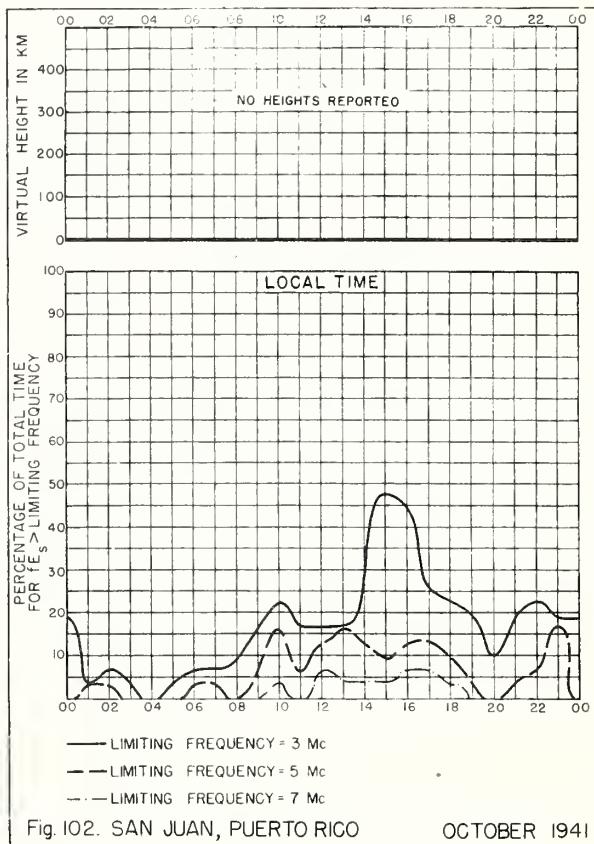
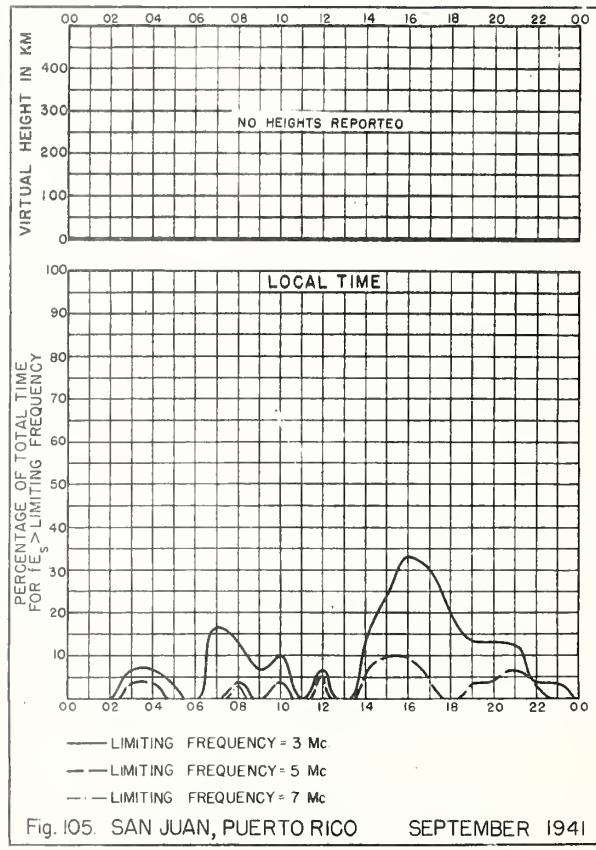
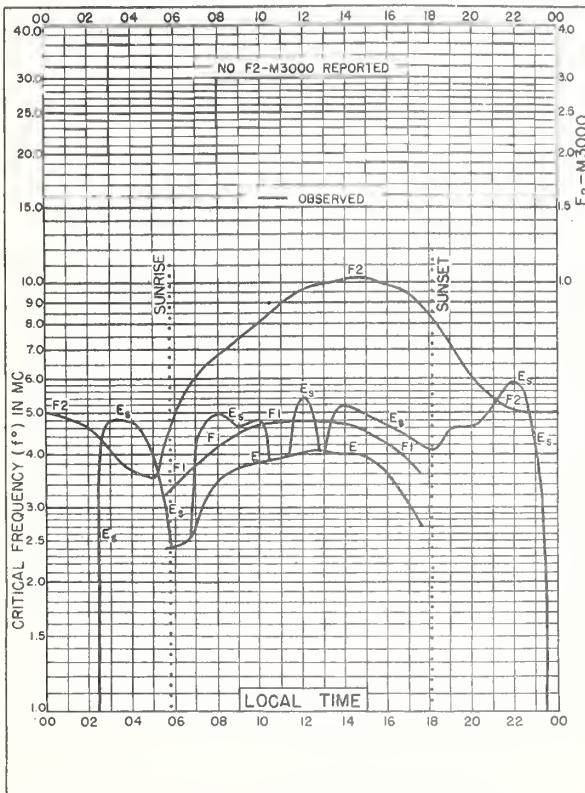
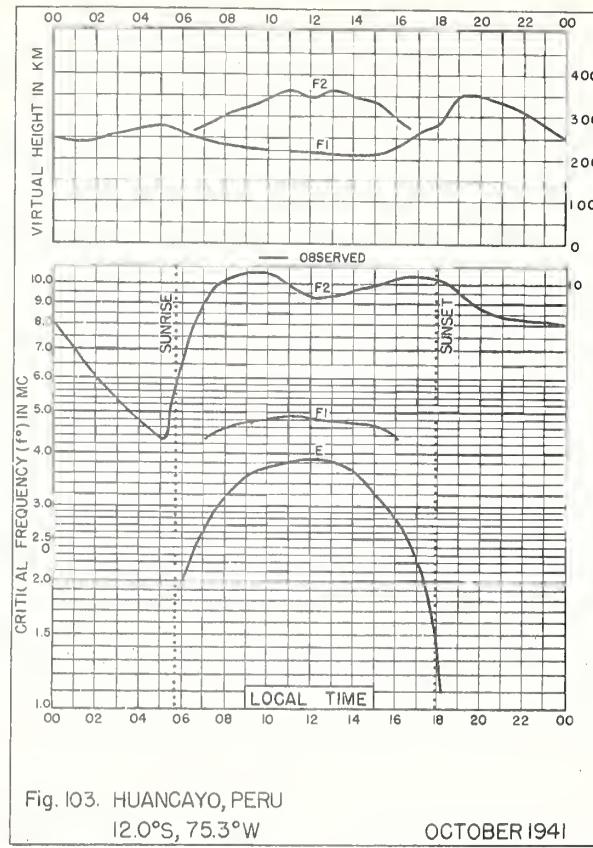
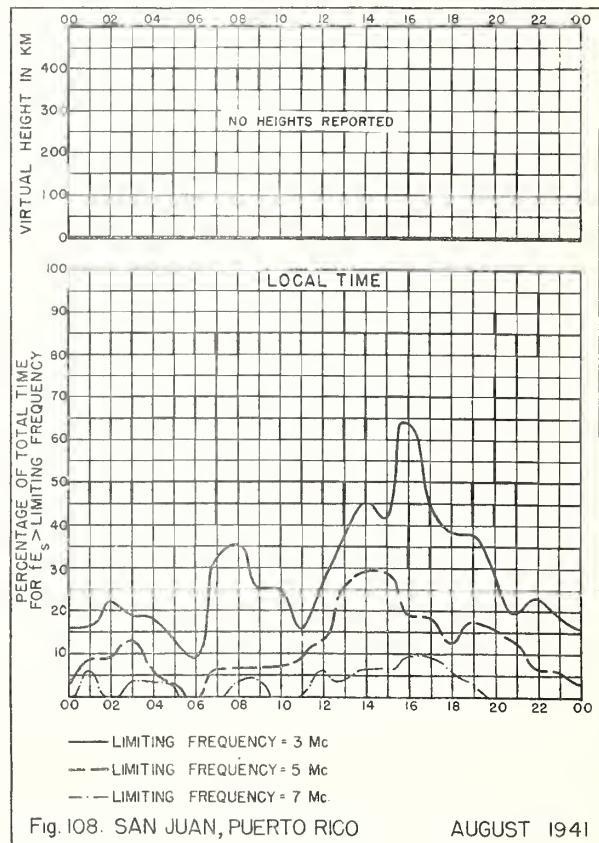
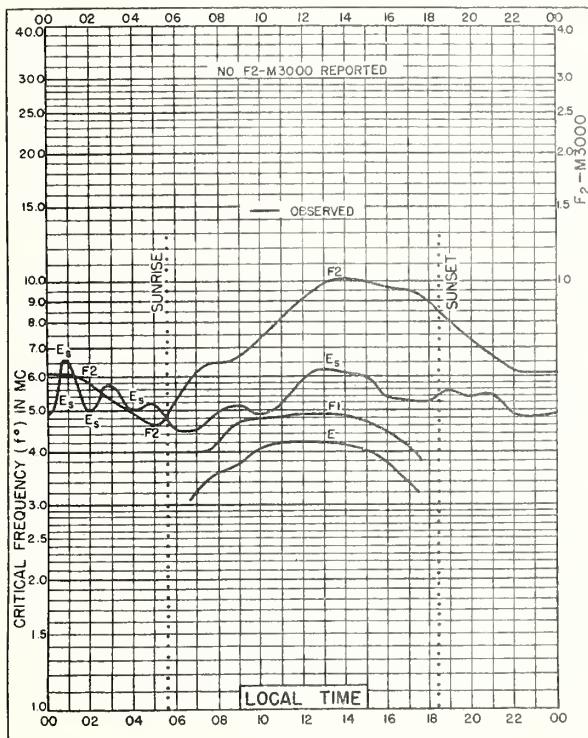
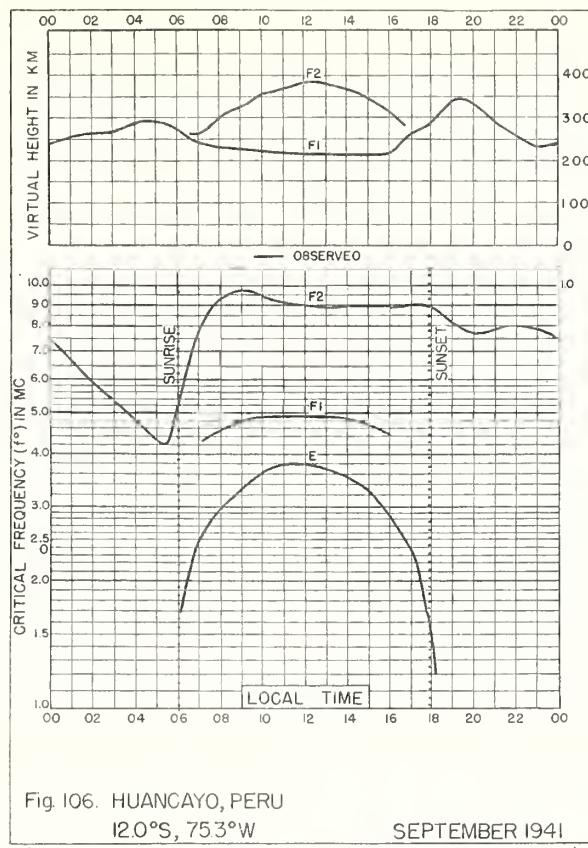
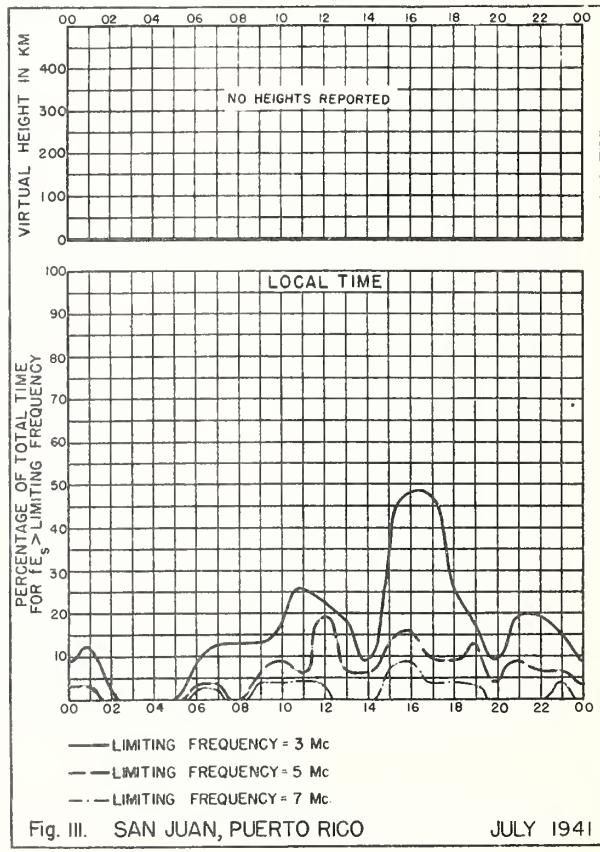
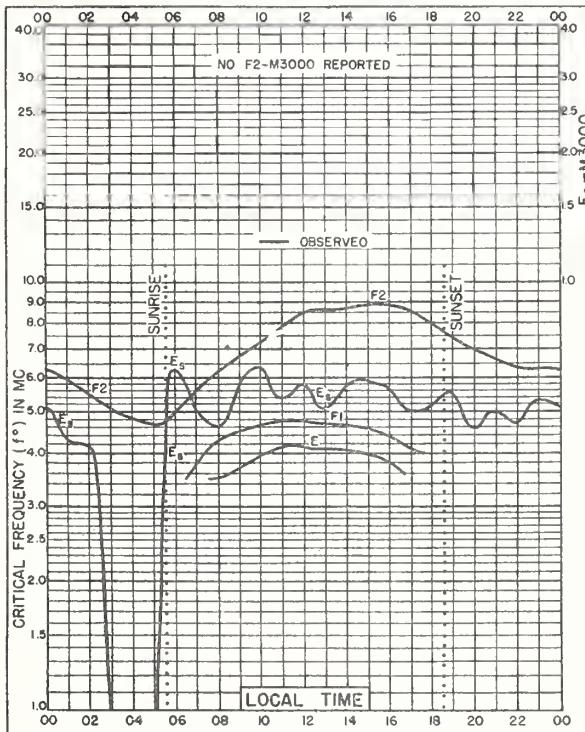
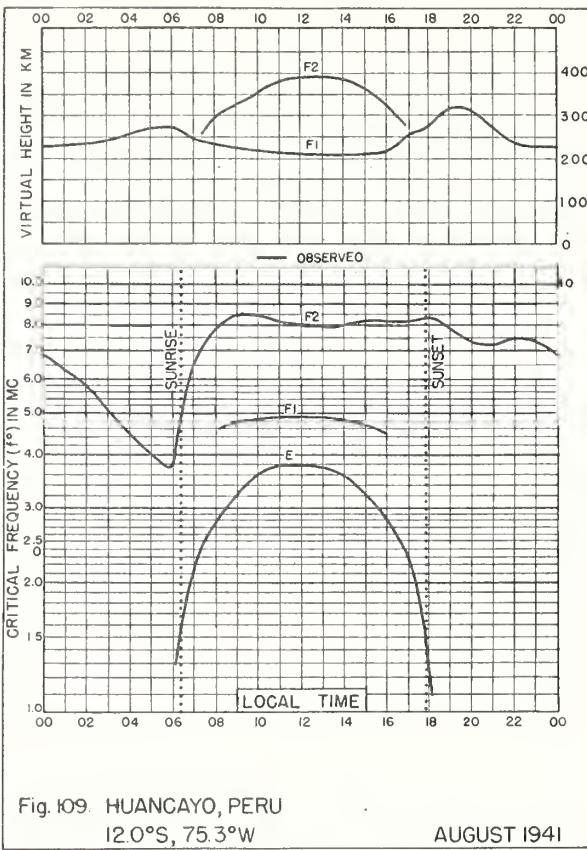
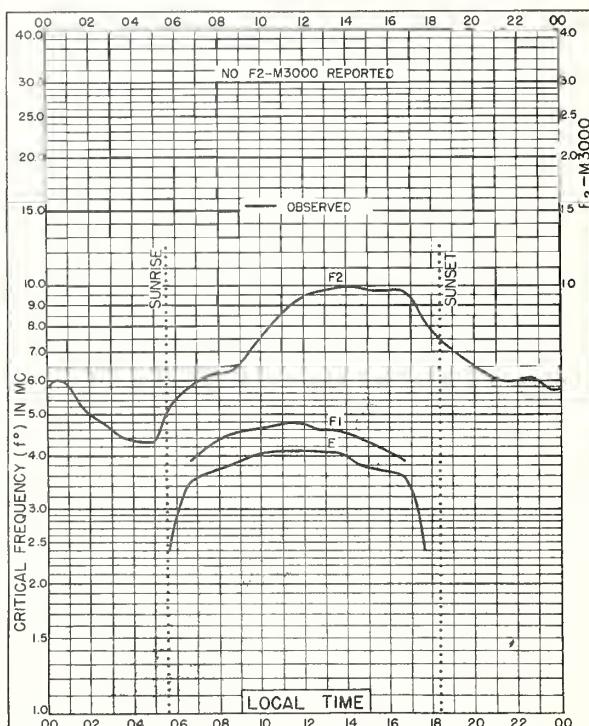
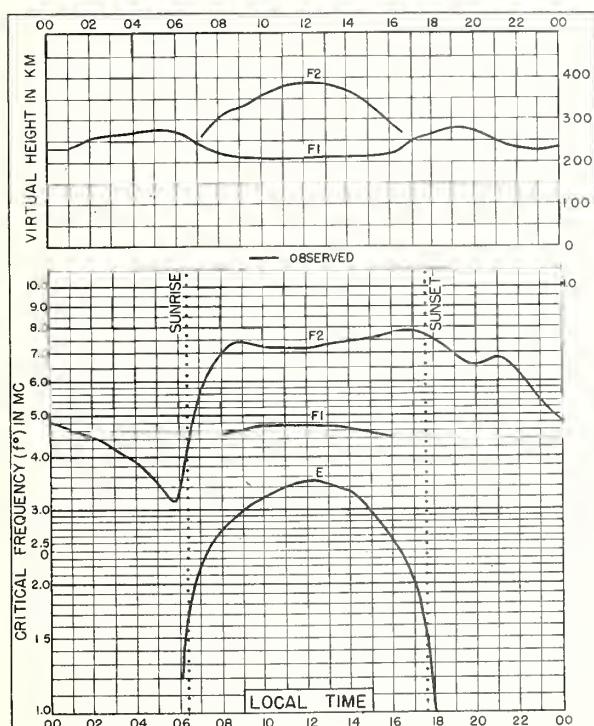
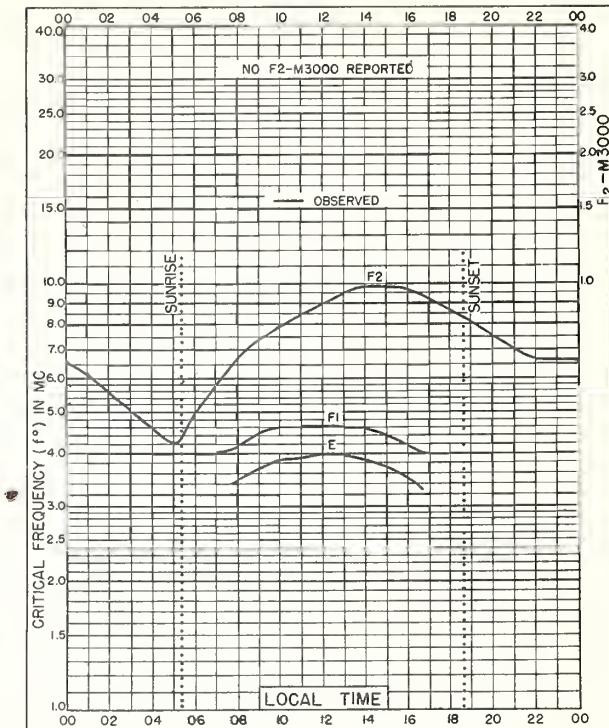
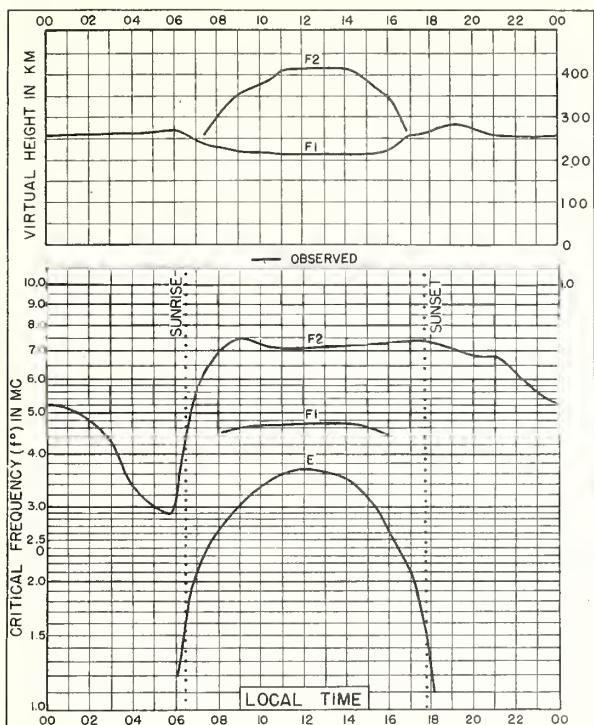


Fig. 102. SAN JUAN, PUERTO RICO OCTOBER 1941









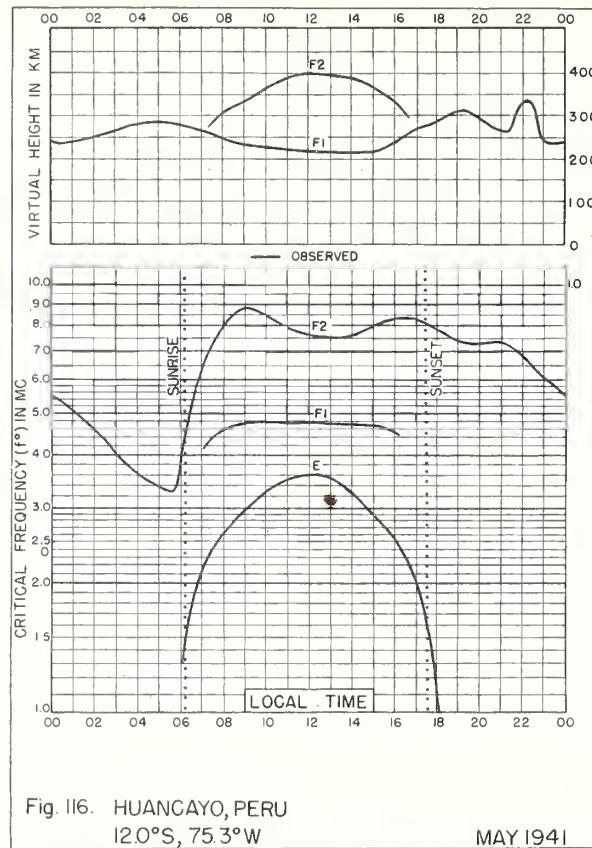


Fig. II6. HUANCAYO, PERU  
12°S, 75.3°W

MAY 1941

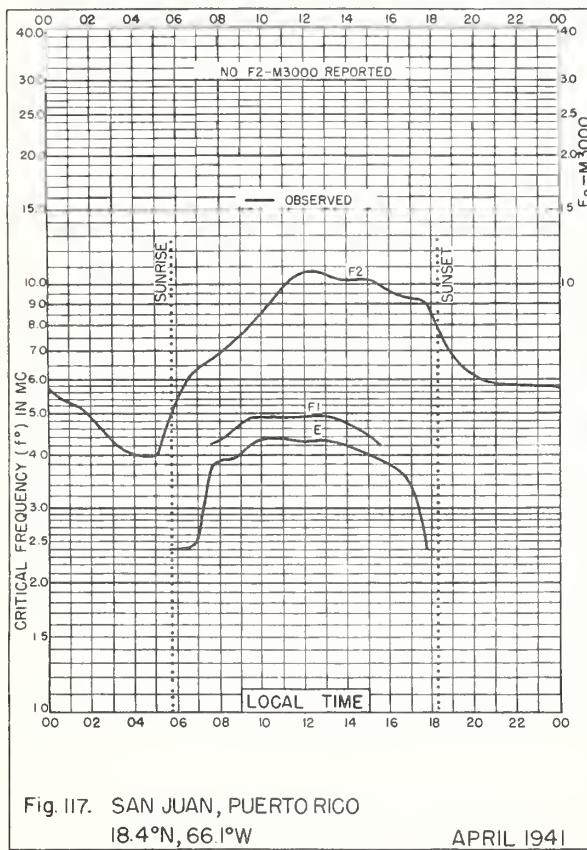


Fig. II7. SAN JUAN, PUERTO RICO  
18.4°N, 66°W

APRIL 1941

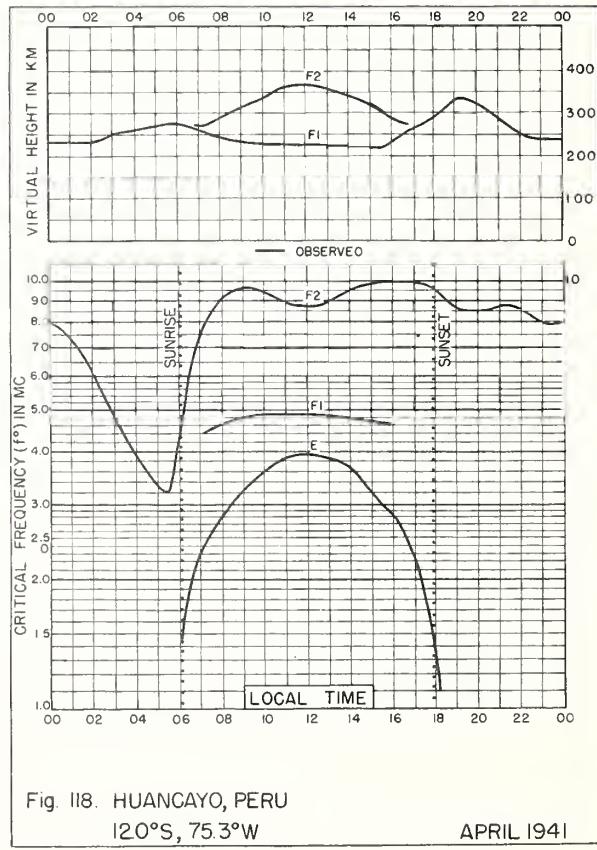


Fig. II8. HUANCAYO, PERU  
12°S, 75.3°W

APRIL 1941

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## CRPL and IRPL REPORTS

### Daily:

Radio disturbance warnings, every half hour from broadcast station WWV of the National Bureau of Standards.  
Telephoned and telegraphed reports of ionospheric, solar, geomagnetic and radio propagation data.

### Weekly:

CRPL-J. Radio Propagation Forecast (of days most likely to be disturbed, during following month).

### Semimonthly:

CRPL-Ja. Semimonthly Frequency Revision Factors for CRPL Basic Radio Propagation Prediction Reports.

### Monthly:

CRPL-D. Basic Radio Propagation Predictions—Three months in advance. (War Dept. TB-11-499-, monthly supplements to TM 11-499; Navy Dept. DNC-13-1 ( ), monthly supplements to DNC-13-1).

CRPL-F. Ionospheric Data.

### Quarterly:

\*IRPL-A. Recommended Frequency Bands for Ships and Aircraft in the Atlantic and Pacific.

\*IRPL-H. Frequency Guide for Operating Personnel.

Reports on Ionospheric Measurement Standards.

Reports on Microwave Measurement Standards.

### Reports Issued in Past:

IRPL Radio Propagation Handbook, Part 1. (War Dept. TM 11-499; Navy Dept. DNC-13-1.)

IRPL-C61. Report of the International Radio Propagation Conference, 17 April to 5 May 1944.

IRPL-G1 through G12. Correlation of D. F. Errors With Ionospheric Conditions.

IRPL-R. Unscheduled reports:

- R4. Methods Used by IRPL for the Prediction of Ionosphere Characteristics and Maximum Usable Frequencies.
- R5. Criteria for Ionospheric Storminess.
- R6. Experimental Studies of Ionospheric Propagation as Applied to the Loran System.
- R7. Second Report on Experimental Studies of Ionospheric Propagation as Applied to the Loran System.
- R8. The Prediction of Usable Frequencies Over a Path of Short or Medium Length, Including the Effects of  $E_s$ .
- R9. An Automatic Instantaneous Indicator of Skip Distance and MUF.
- R10. A Proposal for the Use of Rockets for the Study of the Ionosphere.
- R11. A Nomographic Method for Both Prediction and Observation Correlation of Ionosphere Characteristics.
- R12. Short Time Variations in Ionospheric Characteristics.
- R13. Ionospheric and Radio Propagation Disturbances, October 1943 Through February 1945.
- R14. A Graphical Method for Calculating Ground Reflection Coefficients.
- R15. Predicted Limits for  $F_2$ -layer Radio Transmission Throughout the Solar Cycle.
- R16. Predicted  $F_2$ -layer Frequencies Throughout the Solar Cycle, for Summer, Winter, and Equinox Season.
- R17. Japanese Ionospheric Data—1943.
- R18. Comparison of Geomagnetic Records and North Atlantic Radio Propagation Quality Figures—October 1943 Through May 1945.
- R19. Nomographic Predictions of  $F_2$ -layer Frequencies Throughout the Solar Cycle, for June.
- R20. Nomographic Predictions of  $F_2$ -layer Frequencies Throughout the Solar Cycle, for September.
- R21. Notes on the Preparation of Skip-Distance and MUF Charts for Use by Direction-Finder Stations. (For distances out to 4000 km.)
- R22. Nomographic Predictions of  $F_2$ -layer Frequencies Throughout the Solar Cycle, for December.
- R23. Solar-Cycle Data for Correlation With Radio Propagation Phenomena.
- R24. Relations Between Band Width, Pulse Shape and Usefulness of Pulses in the Loran System.
- R25. The Prediction of Solar Activity as a Basis for Predictions of Radio Propagation Phenomena.
- R26. The Ionosphere as a Measure of Solar Activity.
- R27. Relationships Between Radio Propagation Disturbance and Central Meridian Passage of Sunspots Grouped by Distance From Center of Disc.
- R28. Nomographic Predictions of  $F_2$ -Layer Frequencies Throughout the Solar Cycle for January.
- R29 and 29-A. Revised Classification of Radio Subjects Used in National Bureau of Standards and First Supplement (N. B. S. Letter Circular LC-814 and supplement, superseding circular C385).
- R30. Disturbance Rating in Values of IRPL Quality—Figure Scale From A. T. & T. Co. Transmission Disturbance Reports to Replace T. D. Figures as Reported.
- R31. North Atlantic Radio Propagation Disturbances, October 1943 Through October 1945.
- R32. Nomographic Predictions of  $F_2$ -Layer Frequencies Throughout the Solar Cycle, for February.
- R33. Ionospheric Data on File at IRPL.
- R34. The Interpretation of Recorded Values of  $fE_s$ .
- R35. Comparison of Percentage of Total Time of Second-Multiple  $E_s$  Reflections and That of  $fE_s$  in Excess of 3 Mc.

IRPL-T. Reports on Tropospheric Propagation.

T1. Radar Operation and Weather. (Superseded by JANP 101.)

T2. Radar Coverage and Weather. (Superseded by JANP 102.)

CRPL-T3. Tropospheric Propagation and Radio-Meteorology. (Reissue of Columbia Wave Propagation Group WPG-5.)

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